CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF CITY PLANNING

FINAL
ENVIRONMENTAL IMPACT REPORT

UNDERWATER WORLD AQUARIUM AT PIER 39
86.674E

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Changes from the text of the Draft EIR are indicated by solid dots (●) at the beginning of each revised sentence, paragraph, section, graphic, or table.

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Underwater World
aquarium at Pier 39 :
[1989]

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● CERTIFICATION MOTION

File No: 86.674E
Address: Underwater world at Pier 39
Assessor's Block 9900

SAN FRANCISCO

CITY PLANNING COMMISSION

MOTION NO. 11720

ADOPTING FINDINGS RELATED TO THE CERTIFICATION OF A FINAL ENVIRONMENTAL IMPACT REPORT FOR A PROPOSED AQUARIUM, UNDERWATER WORLD AT PIER 39, ON THE EMBARCADERO BETWEEN STOCKTON AND BEACH STREETS.

MOVED, that the San Francisco City Planning Commission (hereinafter "Commission") hereby CERTIFIES the Final Environmental Impact Report identified as case file No. 86.674E, Underwater World at Pier 39 (hereinafter "Project") based upon the following findings:

1) The City and County of San Francisco, acting through the Department of City Planning (hereinafter "Department") fulfilled all procedural requirements of the California Environmental Quality Act (Cal. Pub. Res. Code Section 21000 et. seq., hereinafter "CEQA"), the State CEQA Guidelines (Cal. Admin. Code Title 14, Section 15000 et. seq., (hereinafter "CEQA Guidelines") and Chapter 31 of the San Francisco Administrative Code (hereinafter "Chapter 31").

a. The Department determined that an EIR was required and provided public notice of that determination by publication in a newspaper of general circulation on January 29, 1988.

b. On August 12, 1988, the Department published the Draft Environmental Impact Report (hereinafter "DEIR") and provided public notice in a newspaper of general circulation of the availability of the DEIR for public review and comment and of the date and time of the City Planning Commission public hearing on the DEIR; this notice was mailed to the Department's list of persons requesting such notice.

c. Notices of availability of the DEIR and of the date and time of the public hearing were posted near the project site by Department staff on August 19, 1988.

d. On August 12, 1988 copies of the DEIR were mailed or otherwise delivered to a list of persons requesting it, to those noted on the distribution list in the DEIR, to adjacent property owners, and to government agencies, the latter both directly and through the State Clearinghouse.

e. Notice of Completion was filed with the State Secretary of Resources via the State Clearinghouse on August 12, 1988.

2) The Commission held a duly advertised public hearing on said DEIR on September 29, 1988 at which opportunity for public comment was given, and public comment was received on the DEIR. The period for written comments ended September 29, 1988.

3) The Department prepared responses to comments on environmental issues received at the public hearing and in writing during the 48-day public review period for the DEIR: prepared revisions to the text of the DEIR in response to comments received or based on additional information that became available during the public review period; and corrected errors in the DEIR. This material, presented in a "Draft Summary of Comments and Responses," published on May 4, 1989, was distributed to the Commission and to all parties who commented on the DEIR, and was available to others upon request at Department offices.

4) A First Addendum to the Draft Summary of Comments and Responses was published on June 1, 1989, was distributed to the Commission and to all parties who commented on the DEIR, and was available to others upon request at Department offices. A Second Addendum to the Draft Summary of Comments and Responses was published on July 13, 1989, was distributed to the Commission, and was available to others upon request at Department offices.

5) A Final Environmental Impact Report has been prepared by the Department, consisting of the Draft Environmental Impact Report, any consultations and comments received during the review process, any additional information that became available, the Draft Summary of Comments and Responses and its addenda as required by law.

6) Project Environmental Impact Report files have been made available for review by the Commission and the public, and these files are part of the record before the Commission.

7) On July 20, 1989, the Commission reviewed and considered the Final Environmental Impact Report and found that the contents of said report and the procedures through which the Final Environmental Impact Report was prepared, publicized and reviewed comply with the provisions of CEQA, the CEQA Guidelines and Chapter 31.

8) The City Planning Commission hereby does find that the Final Environmental Impact Report concerning File No. 86.674E: Underwater World at Pier 39, is adequate, accurate and objective, and that the Summary of Comments and Responses and its addenda contain no significant revisions to the Draft Environmental Impact Report, and hereby does CERTIFY THE COMPLETION of said Final Environmental Impact Report in compliance with CEQA and the CEQA Guidelines.

9) The Commission, in certifying the completion of said Final Environmental Impact Report, hereby does find that the project as described in the Final Environmental Impact Report:

(a) will have project-specific significant effects on the environment in that it will block some Bay views from public waterfront streets and open space, including The Embarcadero promenade and some sidewalks on Beach Street.
(b) will, in conjunction with other reasonably foreseeable development in the Northern Waterfront area, contribute to the significant effects of cumulative development in the area in that it would result in the degradation of some intersections to unacceptable Levels of Service during the weekday P.M. peak hour and during the weekend peak hour.

I hereby certify that the foregoing Motion was ADOPTED by the City Planning Commission at its regular meeting of July 20, 1989.

Lori Yamauchi
Secretary

AYES: Commissioners Bierman, Boldridge, Dick, Engmann, Hu, Karasick and Morales

NOES: None

ABSENT: None

ADOPTED: July 20, 1989

CVB:154

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I. SUMMARY

INTRODUCTION

The following Draft Environmental Impact Report discusses the potential environmental impacts of a proposed project on Pier 39 in the Fisherman's Wharf Area of San Francisco. This report addresses issues that the San Francisco Department of City Planning has determined to have potential to cause significant impacts on the environment.

A. PROJECT DESCRIPTION

The Underwater World Company (a company formed by Pier 39 Limited Partnership, ERA Equities of San Francisco and Argus Questar Corporation of Auckland, New Zealand) proposes to construct an aquarium and marine educational facility on existing and new piles over the Bay at Pier 39. Currently, the entire Pier 39 complex contains 198,000 gross square feet of space including restaurant and retail use and a 240-seat theatre. The proposed aquarium would be constructed on the southeast edge of the existing Pier 39 complex, on a site which presently contains portions of the existing amusement facility, a public accessway and 18 boat slips in the Pier 39 marina.

The proposed aquarium would contain a total of 48,200 gross square feet (gsf) including lobby and public circulation space (2,800 gsf), a book shop (2,200 gsf), office and staff space (3,800 gsf), exhibit areas (6,300 gsf), a function room and adjacent service area (2,350 gsf), a large tank (9,500 gsf), service area (1,550 gsf), tank service areas (3,800 gsf), and ancillary space (15,900 gsf). As part of the proposed project the sponsor would expand the capacity of the existing Pier 39 parking garage by 100 to 120 spaces and would cause 400 spaces to be opened to the public on weekends at the AMPCO parking garage at 80 Francisco Street in order to accommodate additional demand generated by the Underwater World project. The building would have one off-street loading space and would rise two stories to a height of 40 feet with a ten-foot mechanical penthouse.

The aquarium would require an amendment to the previous Pier 39 Conditional Use Authorization from the City Planning Commission (CPC Resolution 7551) for the construction of a commercial recreation facility within the Northern Waterfront Special Use District No. 1.

B. ENVIRONMENTAL IMPACTS

1. LAND USE, ZONING, BAY FILL (pages 70 to 77)

The proposed aquarium would result in an intensification of uses on Pier 39. The proposed project would contain a total of 48,200 gsf. Approximately 3,600 square feet of the existing building on the site would be removed, 3,500 gsf of the existing building would be incorporated into the aquarium for a net increase of 41,100 square feet. The proposed project would extend an additional 19,400 square feet over the water of the Pier 39 Marina. This proposed new pier area will be considered new Bay Fill by the Bay Conservation and Development Commission. About 11,800 square feet of this space would be covered by the proposed aquarium building and about 7,600 square feet would be a perimeter access road and pedestrian walkway. The proposed project would be a commercial recreational use in an area with other such uses. It would be permitted as a conditional use.

2. URBAN DESIGN AND VISUAL QUALITY (pages 78 to 86)

The proposed project would result in the removal of a structure attached to the southeast portion of the octagonal building at the entry of Pier 39. The replacement structure would have two stories and would rise 40 feet above the street. An elevator penthouse tower, located near the southeast corner of the building, would rise to a height of 50 feet above the street, 10 feet higher than the rest of the building. The building design would include numerous setbacks and sloped roofs. Building material would include glass block, wood siding, sloped dark-colored painted metal roofs and board form concrete.

The proposed project would be most noticeable from vantage points along the Embarcadero to the southeast and would obstruct some views of the Pier 39 Marina from the pedestrian walkway along the Embarcadero. The structure would not be seen from the pedestrian corridor of Pier 39 as it would be blocked by existing structures. It would be visible from Telegraph Hill.

3. TRANSPORTATION (pages 87 to 118)

In the first year, when traffic impacts would be their greatest, the proposed project would generate about 7,750 net new weekday daily (two-way) person trips and about 7,810 net new weekend daily (two-way) person trips with an hourly attendance limited to 900 visitors. Weekday p.m. peak-hour (5:00-6:00) person trips would increase by about 150 and weekend p.m. peak-hour (3:00-4:00) person trips would increase by about 170.

The project sponsor would expand the capacity of the existing Pier 39 parking garage by 100 to 120 spaces and would cause 400 parking spaces to be opened to the public on weekends at the AMPCO garage at 80 Francisco Street. Potential measures which would help to direct drivers to the reserved parking at 80 Francisco Street include modifying the existing Pier 39 garage sign at the corner of The Embarcadero/Beach, placing sandwich boards along The Embarcadero and supplying traffic/parking control personnel to direct people to the additional parking.

The proposed project would result in increases in volume-to-capacity ratios at 3 of the 8 study area intersections on weekdays and 3 of the 8 study area intersections on weekends. No significant level of service changes would occur due to project traffic.

4. AIR QUALITY (pages 119 to 120)

The Bay Area Quality Management District (BAAQMD) considers that development generating less than 2,000 vehicle trip ends per day would not have a measurable impact on air quality and therefore does not require an air quality analysis for such developments. The project would generate about 1,220 new vehicle trip ends daily. Where cumulative development could measurably contribute towards regional and/or local emissions, the District may require an air quality analysis.

Cumulative development in San Francisco would not lead to an increase in total Bay Area ozone concentrations. It is possible that excess NO_x emissions generated by cumulative development could increase ozone and/or nitrogenous oxidant concentrations further downwind, outside the Bay Area. In addition, NO_x emissions generated by cumulative development throughout the Bay Area could increase acid rain further downwind, outside the Bay Area, though to a relatively small extent.

Emissions of particulates resulting from construction and from vehicle trips generated by the projects and cumulative development would increase TSP concentrations, which could increase the frequency of the particulate (PM-10) standard violations in San Francisco, with concomitant health effects and reduced visibility.

5. WATER QUALITY/BIOLOGY (pages 121 to 124)

Because the variety of fish selected for the proposed aquarium would be indigenous to the San Francisco Bay and Northern Pacific waters, the project sponsor proposes to use Bay water in the aquarium. Before going into the tank, the water would be filtered and disinfected.

The proposed project would produce two wastewater discharges into the Bay. The first would be a continuous discharge from the recirculating system. This "blowdown" discharge would be in compliance with all applicable effluent limits and water quality standards and would produce no adverse effects on the Bay waters. The second discharge would be the intermittent flow of water used to clear the filters. This "backwash" would remove particulate materials from the tank. The project sponsor would be required to meet all effluent standards as required by the Regional Water Quality Control Board (RWQCB). The new piles could affect water circulation in the vicinity of the site. Current speeds would not be reduced below present levels by a sufficient amount to appreciably affect sedimentation.

6. GEOLOGY/TOPOGRAPHY (pages 125 to 127)

The proposed project would be constructed on piles through Upper Bay Mud into Lower Bay Clay and dense sand. In a moderate earthquake (7.5 on the Richter scale), minor damage would occur to the tank. In a major earthquake (8.5+ on the Richter scale) severe damage would occur, but there would be no collapse of the tunnel or tank. The acrylic tank and tunnel would be anchored in a gravel base and sealed with an elastic material that could articulate (flex) to prevent fracturing.

7. CONSTRUCTION NOISE (pages 128 to 133)

Construction of the proposed project would take place over a 14 month period, with the highest noise levels being generated by pile driving (105 dBA at 50 feet) which would take place over a 7 to 9 week period. It is anticipated that the noise levels generated during

construction would result in a disturbance to workers and residents in nearby buildings. Mitigation measures have been incorporated into the project to minimize noise impacts on surrounding uses during construction.

8. GROWTH INDUCEMENT (page 134)

The proposed project would result in 41,100 gross square feet of new space in the Fisherman's Wharf area. The project could induce commercial growth in the area, because of the increased number of visitors.

C. MITIGATION MEASURES

Some of the mitigation measures included in the proposed project are listed below; the complete list of mitigation measures, both those included in the project and those not included, is found in Section V, pages 135 through 149.

TRANSPORTATION

- Time-specific admission tickets would be required to control the visitor flow at a level commensurate with the capacity of the proposed aquarium. The project could not physically accommodate more than 900 visitors per hour. However, the projected attendance demand could be much greater than 900 hourly visitors.

- The project sponsor would increase the capacity of the garage by 100 to 120 spaces by restriping to increase the number of compact stalls (18 spaces), reconfiguring the layout of existing stalls (22 spaces), and increasing valet operations in the garage (60 to 80 additional valet spaces beyond the number of valet spaces used today during peak summer weekends).

- The project sponsor would modify the existing Pier 39 garage to provide a second garage access point at the Stockton/Beach intersection and by recessing control gates, which would provide additional off-street stacking area, improve circulation in the project vicinity, and reduce congestion at the Powell/Jefferson/Embarcadero intersection (one of the garage circulation alternatives studied would provide a third access, also on Beach Street).

CONSTRUCTION NOISE

- The project sponsors would require that the construction contractors limit pile driving activity to the hours between 8:00 a.m. to 6:00 p.m. This would require work permits from the Director of Public Works pursuant to the San Francisco Noise Ordinance Section 2907(c).

- The construction contracts would require that the project contractors muffle and shield intakes and exhaust, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible, so that noise would not exceed limits in the City Noise Ordinance (Article 29, San Francisco Police Code, 1972)

WATER QUALITY/MARINE BIOLOGY

- The project sponsor would meet all effluent standards as required by the Regional Water Quality Control Board.

- Only species native to Northern California Pacific and Bay Waters would be contained in the aquarium.

D. ALTERNATIVES (pages 152 to 169)

ALTERNATIVE ONE: NO PROJECT

This alternative would entail no change to the existing site or uses on the site. The environmental characteristics associated with this alternative would be the same as those described in the Environmental Setting section of this EIR. The alternative would involve no change to the project site as it now exists and none of the impacts associated with the proposed project would occur.

The project sponsor has rejected this alternatives because it does not meet any of their objectives as outlined in the Project Descriptions sections of this EIR.

ALTERNATIVE TWO: DIFFERENT WATERFRONT LOCATION

This alternative involves two variants: Variant One would locate the proposed Underwater World Aquarium at the front of Pier 37, and Variant Two would locate the

proposed Underwater World Aquarium on a pier south of the the San Francisco-Oakland Bay Bridge.

Under Variant One of this Alternative, the building facade would be typical of other pier structures and would be parallel to The Embarcadero. Impacts associated with air quality, operating noise, water quality and marine biology, and growth inducement would not change as compared to those described for the proposed project in Chapter 4, Impacts, of this document. Impacts relating to urban and visual quality would be greater than the proposed project as the building would extend east along The Embarcadero using open space and blocking Bay views. Transportation impacts associated with volume/capacity flows, vehicular-related air quality emissions, and vehicular-related noise would remain unchanged as compared to the proposed project. However, impacts relating to parking and pedestrian circulation could change as the project would be located further east from the "core" of the Fisherman's Wharf Area. Because this alternative would require more than twice as many piles to be driven into the Bay than is currently proposed, impacts relating to construction noise and geology/topography would be greater.

The project sponsor has rejected this alternative because it would block important view corridors, use open space, and would extend pedestrian traffic into an area that conflicts with other business activities and heavy road traffic.

The second variant to alternative two is the location of the proposed aquarium south of the Bay Bridge. For the purpose of analysis, Pier 30-32 has been selected. Under this Alternative, impacts relating to land use would be similar to the proposed project in that it would be two stories and use approximately the same site area of 25,400 square feet. The impact on visual quality resulting from the blockage of Bay views could, under the worst case, be greater than those for the proposed project. However, the extent of the impact would depend on the configuration of the proposed project in the pier structure. Visitor trips generated under the alternative would be similar to that for the proposed project site. However, the traffic to Pier 30-32 would be new traffic. Because most of the access for this alternative would be by auto, there would be an increase in auto circulation and parking demands in the area. The increased travel demand could result in increased impacts on vehicular-related air quality and noise impacts in the vicinity of the alternative site. Impacts relating to construction, air quality, water quality, and marine biology and geology/topography would be similar to those impacts related to the proposed

project. Impacts relating to construction, noise could be greater or less than the proposed project depending on the number of new piles required. Growth-inducing impacts could be greater than those described for the proposed project as this alternative would introduce a commercial recreation use into an area which was traditionally maritime/industrial.

The project sponsor has rejected this alternative because of its remote setting, conflicts with other land uses in the area, and inability to meet their objectives as outlined in the Project Description.

ALTERNATIVE THREE: ENTIRE PROJECT ON EXISTING PIER 39

This alternative would require the construction of the Underwater World Aquarium on the existing pilings on the site, without extending the existing pier apron farther into the Bay. The project would be considerably smaller and would displace more existing businesses. No boat slips would be removed.

Under this alternative, approximately 25,400 square feet of existing occupied building space would be replaced as compared to replacement of 3,500 square feet with the proposed project. Visual quality and urban design impacts could be less, as the Aquarium would not extend south into the marina. Transportation and growth inducement impacts would generally remain unchanged as compared to the proposed project. Because there would be greater amounts of demolition, there would be greater impacts on air quality and construction noise than those currently proposed. Pedestrian access and circulation would be more congested at the southern end of Pier 39 as access would be closer to the main entry-way to the entire Pier 39 development. Construction impacts relating to water quality and marine biology would be greater under this alternative than the proposed project because about 200 piles would have to be removed from Pier 39 before installing about 114 new piles.

The project sponsor rejects this alternative because the existing fill on Pier 39 does not provide sufficient loading capacity required for the large concrete tanks or the proper design criteria required for seismic safety.

ALTERNATIVE FOUR: NON-WATERFRONT LOCATION

This alternative involves the location of the proposed aquarium across The Embarcadero on Seawall Lot 314, which is bounded by Bay and Kearny Streets and The Embarcadero.

The site currently contains a gas station, approximately 20 parking spaces and an automotive car wash facility. Because this alternative is not on the waterfront, there would be no new fill on the San Francisco Waterfront; however, large pipes and pumps would be needed to transfer Bay water to and from this alternative site.

Impacts relating to air quality, zoning and growth-inducement would be generally the same as the proposed project. Impacts relating to land use would be greater as the Chevron gas station, parking lot and automatic car wash would be removed. Visual and urban design impacts would be less as existing views of the Bay would remain unchanged. Transportation impacts would generally be the same as the proposed project except for pedestrian circulation which would increase at surrounding traffic intersections near the site. Because there would be no need for additional fill under this alternative, changes to water quality and marin biology would be less than those of the proposed project. Since no piles would be driven, the potential changes to geology and topography would be less than the proposed project.

The project sponsor rejects this alternative because it does not meet the objectives of the project sponsor as outlined in Chapter II of this document and because problems associated with the transportation of ocean water needed for the project would make a non-waterfront location unfeasible. This alternative would also diminish potential educational and recreational aspects related to the Bay.

II. PROJECT DESCRIPTION

1. OBJECTIVES OF THE PROJECT SPONSOR

The project sponsor, the Underwater World Company (a company formed by Pier 39 Limited Partnership, ERA Equities of San Francisco and Questar Corporation of Auckland, New Zealand), proposes to construct an aquarium and educational facility. In proposing this development the project sponsor has the following objectives: to provide a quality recreational facility that will promote the marine and tourist experience associated with the Northern Waterfront area of San Francisco; to teach and highlight the need for Bay and ocean conservation; to provide an educational environment in which both children and adults can experience the types of marine life that are indigenous to the San Francisco Bay; to enhance the marine identity and image of Fisherman's Wharf; to enhance and strengthen the tourist economy of the City and contribute to revitalizing the Fisherman's Wharf area; to achieve a reasonable return from the financial investment; and to expand employment opportunities for the unskilled labor force.

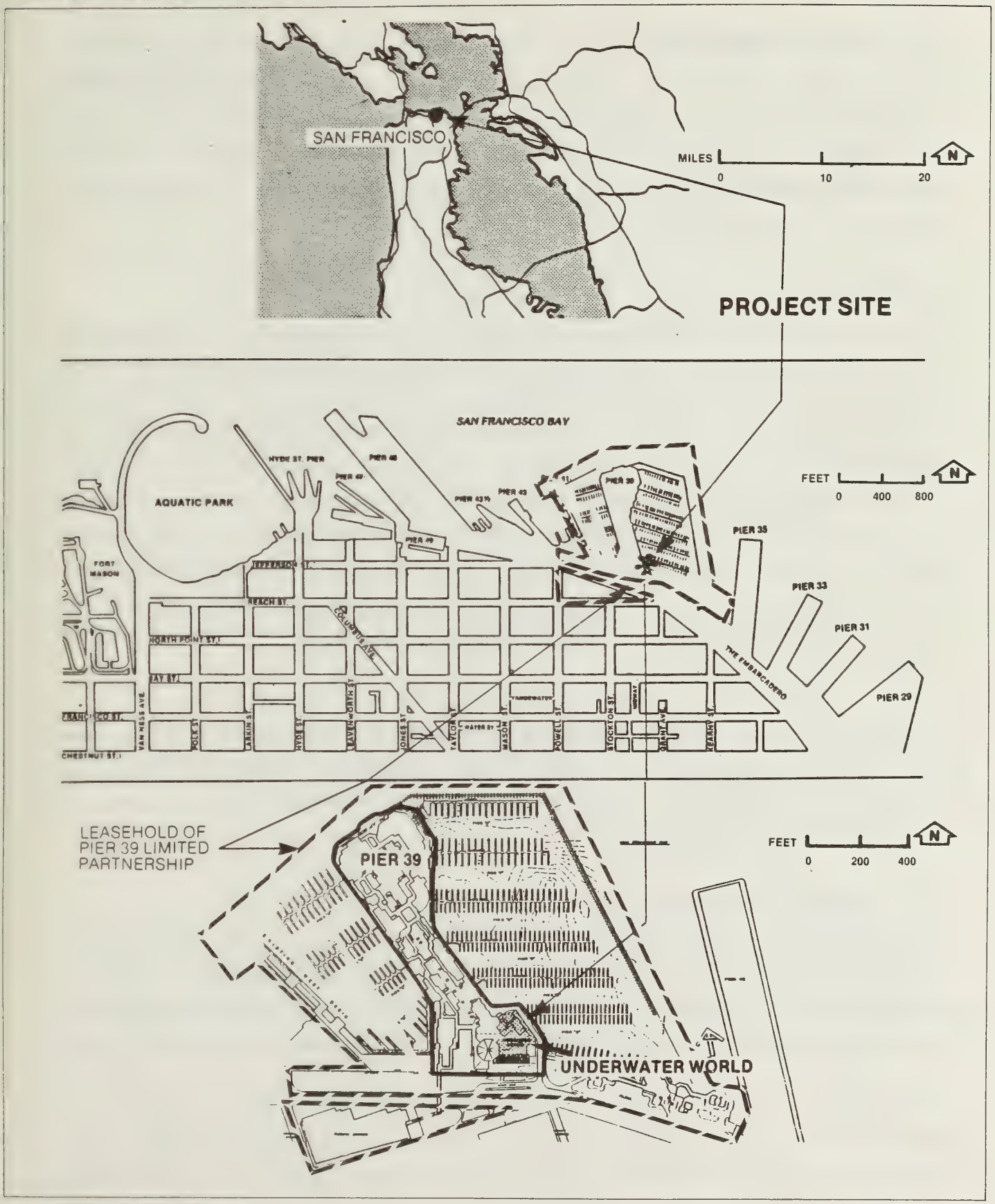
The project architect is Esherick, Homsey, Dodge and Davis of San Francisco.

2. PROJECT LOCATION

The project site is located in the northeastern portion of the City, in the Fisherman's Wharf area of the Northern Waterfront District, north of the Embarcadero between Stockton Street and Grant Avenue (see Figure 1, page 11). The proposed aquarium would be constructed on the southeast edge of the Pier 39 complex which presently contains portions of the existing amusement facility, a public accessway, and 18 boat slips in the Pier 39 marina. The project site is on Assessor's Block 9900. It is located in a C-2 (Community Business) District and in the Northern Waterfront Special Use District No. 1. The site is leased by the Pier 39 Limited Partnership from the Port of San Francisco.

●SITE LOCATION MAP

FIGURE 1



SOURCE: EIP ASSOCIATES

86137

eip

3. PROJECT DESCRIPTION

The development of Pier 39 was approved in August 1976 as a Conditional Use (City Planning Commission Resolution 7551, modified in March 1980 with CPC Resolution 8548, see Appendix E). Pier 39 consists of approximately 198,000 gross square feet of small-scale retail, restaurant and theatre uses, a 351-berth public marina, a waterfront park, and a 937-car parking garage.

A. Site Area

The proposed project would be an aquarium and educational facility built on piles over the Bay in the Pier 39 marina and attached to the existing Pier 39 development. The entire Pier (from the seawall) consists of 261,676 square feet. The proposed project would add 19,900 square feet of new pier area of which 11,800 square feet would be under the building (aquarium structure) and 8,100 square feet would be other new pier area (view bays, roadway, loading, and Pier 39 service area), which would serve both as a service access road to the Pier 39 complex and as public pedestrian access to the perimeter of Pier 39. This additional 19,900 square feet of new pier area would result in the removal of 18 boat slips that currently occupy the Pier 39 marina. As a result of the proposed project, the total new square footage of Pier 39 would be 281,576 (see Table 1, page 13, below).

The proposed project would be constructed on both existing and new piles. Of the total 25,500 square foot footprint of the new building, 13,700 square feet would be built on the existing Pier 39 structure and 11,800 square feet of the building footprint would be built on new piles (see Table 1, page 13).

B. Proposed Project Building Area

The aquarium site currently contains a 2-story building with various video entertainment games on the first floor. The building would be partially demolished on the east side (approximately 4,100 square feet) but the existing octagonal construction on the west side would be retained. There would be no changes to the existing theatre on the second floor.

The proposed project would contain a total of 49,400 gross square feet of floor area, of which 45,900 would be new construction. The first story of the proposed aquarium would contain approximately 25,500 gsf of area including the lobby, the main tanks, a book shop,

a tidal pool, and storage and mechanical rooms. There would be a service yard at the eastern end of the building. A

● TABLE 1

SITE AREA CALCULATIONS

Pier 39 Site Area		Square Feet
Existing		261,676
Proposed New Pier Area		
Under Building Footprint	11,800	
Other New Pier Area		
Total New Pier Area	8,100	19,900
Total Proposed Pier 39 Site Area		281,576
Footprint of New Building		
Portion on Existing Pier		13,700
Portion on New Pier		11,800
Total Footprint of New Building		25,500
Footprint of New Deck		19,900

Source: Esherick Homsey Dodge and Davis; EIP Associates.

partial mezzanine would contain 8,200 gsf of area including catwalk over the tanks, a book shop mezzanine, a lab, and staff service rooms. The second story of the project would contain approximately 14,050 gsf of area including administrative offices, an education and function room, exhibit areas, a storage room and a filter yard. At the second story a public promenade with view decks would run along the northeastern side of the building providing new views of the Pier 39 marina and the Bay. A third story would contain 550 gsf for a new stairway and related space, and the roof would contain 1,100 gsf of enclosed mechanical space (see Table 2, page 15).

C. Pier 39 Building Area

The entire Pier 39 development is comprised of approximately 198,000 gross square feet (gsf). This includes 123,678 gsf of retail space, 65,872 gsf of restaurant space, 8,450 gsf of theatre space (240 seats) and a 351-slip marina. The proposed project would remove 4,100 gsf of existing retail space and add 45,900 gsf of retail use (for a net change of +41,800 gsf). The proposed project would also remove 18 existing boat slips. There would be no changes to restaurant and theatre uses at Pier 39. Upon completion of the proposed project, there would be a total of 239,800 gsf in the entire Pier 39 complex including 165,578 gsf of retail space (see Table 3, page 16).

D. Other Project Characteristics

The main entrance to the aquarium would be from The Embarcadero, on the east side of the main Pier 39 thoroughfare. Visitors would enter the facility and pass through an educational exhibit (a tide pool display) prior to entering an acrylic tunnel through the aquarium tank.

The aquarium tank would contain approximately 707,000 gallons of salt water drawn from the Bay at the end of Pier 39 and filtered through a set of pressure filtration tanks. Water in the tank would not be heated or cooled; it would remain at the ambient San Francisco Bay temperature, and the circulation system would be semi-closed. A semi-closed system allows the aquarium water to be gradually released and replaced while being continuously circulated and filtered. A moveable walkway would carry visitors through an acrylic tunnel passing through the interior of the aquarium tank. The aquarium would contain approximately 2,000 fish which are indigenous to the Bay Area and Northern California.

● TABLE 2

UNDERWATER WORLD AQUARIUM CHARACTERISTICS
(GROSS SQUARE FEET)

	New	Existing	Total
Area By Use			
Lobby/Public Circulation	2,800		
Book Shop	2,200		
Office and Staff	3,800		
Exhibit Areas	6,300		
Function Room and Service Area	2,350		
Large Tank	9,500		
Service Area		1,550	
Tank Service Areas	3,800		
All Other Areas (toilets, halls stairs, storage, auxiliary areas, walls, mech. rooms, etc.)	15,150	1,950	
TOTAL GROSS	45,900	3,500	49,400
Area By Floor			
First	23,500	2,000	25,500
Mezzanine	7,800	400	8,200
Second	13,500	550	14,050
Third	0	550	550
Roof Mechanical	1,100		1,100
Total Aquarium Area	45,900	3,500	49,400
Building Area Removed	N/A	-4,100	-4,100
Net Building Gain			45,300

Source: Esherick Homsey Dodge and Davis; EIP Associates.

● TABLE 3

PIER 39 FLOOR AREA CALCULATIONS

	Gross Square Feet	Occupied Square Feet
Pier 39 Existing		
Retail	123,678	111,330
Restaurant	65,872	52,720
Theatre - 240 seats	8,450	8,450
Marina - 351 slips	N/A[1]	N/A[1]
TOTAL	198,000	172,500
Proposed Project		
Retail		
Added	45,900	26,120
Removed	4,100	3,600
Net Change	41,800	22,520
Marina		
Removed - 18 slips		
Pier 39 Future		
Retail	165,478	133,850
Restaurant	65,872	52,720
Theatre - 240 seats	8,450	8,450
Marina - 333 slips	N/A[1]	N/A[1]
TOTAL	239,800	195,020

[1]Not applicable.

Source: Esherick Homsey Dodge and Davis; EIP Associates.

- Within the 51,400 square foot delineated site coverage area as shown in Figures 21A and 21B of the DEIR, the proposed project would result in the net loss of approximately 1,100 square feet of ground level landscaping and 3,600 feet of ground level pedestrian pavement. The proposed project would result in the net addition of 1,800 square feet of ground level covered open space and 600 square feet of ground level roadway which would extend around the entire Pier 39 development (see Table 6, page 72). The proposed project would also result in the net addition of approximately 7,000 square feet of second level public promenade with view decks along the northeastern side of the building. See Figure C&R 28 on page C&R 259.

- In addition to the changes in site coverage described above, the proposed project could result in changes in site coverage outside the 51,400 square foot area designated in Figures 21A and 21B. With the inclusion of the mitigation measures for transportation as described on pages 144-146 of the DEIR as modified by pages C&R 128-129, 154-162 and the first Addendum (June 1, 1989), there could either be a net addition of approximately 6,000 square feet of ground level pedestrian pavement and landscaped open space near the project site through the conversion of the existing tour bus/taxi loading area or a net loss of approximately 5,400 square feet of existing open space through the extension of the existing tour bus/taxi loading area. In addition, there would be a net loss of approximately 3,000 to 6,000 sqaure feet (depending on the alternative) of ground level open space area contained in Seawall Lot 312.

The proposed project would rise two stories and be approximately the same height as the existing building. The ground floor facade of the proposed project would consist of glass block along The Embarcadero and board form concrete and wooden fencing along the service road. Above ground materials include wood facades, louvers and dark colored metal roofs. A new wooden railing would be constructed, similar to the one which now exists, on the east side of the new pier deck (see Figures 2 through 9, pages 18 to 25).

As part of the proposed project, the sponsor would expand the capacity of the existing Pier 39 parking garage by 100 to 120 spaces by restriping to increase the number of compact stalls (18 spaces), reconfiguring the layout of existing stalls (22 spaces), and increasing valet operations in the garage (60 to 80 additional valet spaces beyond the number of valet spaces used today during peak summer weekends). In addition, the sponsor would cause 400 spaces to be opened to the public on weekends in order to accommodate additional demand generated by the Underwater World project at the AMPCO parking garage at 80 Francisco Street. Signage would be placed near queuing

lines along The Embarcadero and traffic/parking control personnel would help redirect people to the parking garage at 80 Francisco Street.

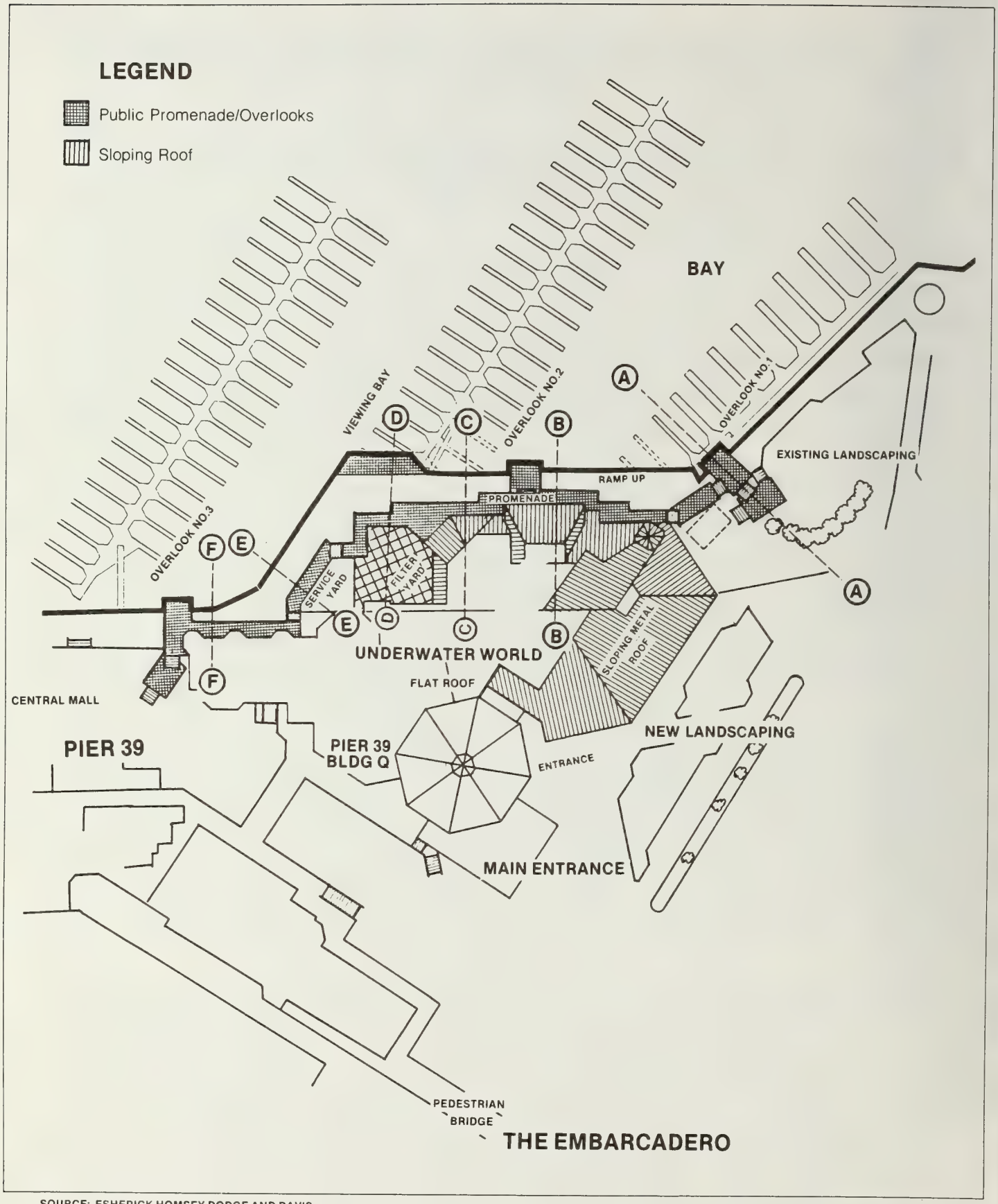
- The proposed site plan (see Figure 2, page 18), includes one new off-street loading space to be located on the northern edge of the aquarium.

4. PROJECT APPROVALS

Following a public hearing on this EIR before the City Planning Commission, responses to all written and oral comments will be prepared; this EIR will be revised accordingly and presented to the City Planning Commission for certification as to accuracy, objectivity and completeness. All City, Regional, and State agencies must review and consider the information contained in the Final EIR before making any decision to approve the project.

● SITE PLAN

FIGURE 2



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

NO SCALE

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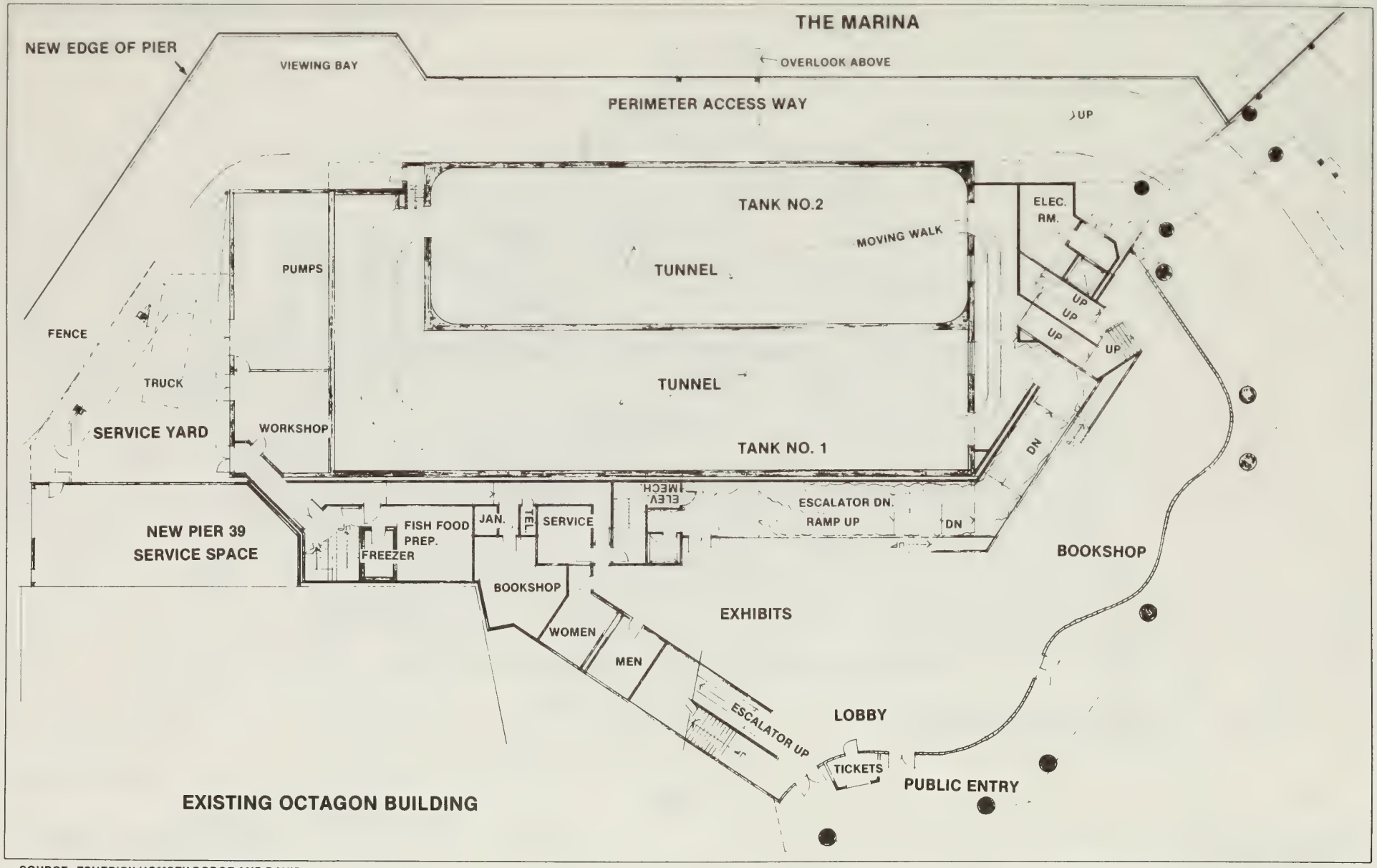
● FIRST FLOOR

FIGURE 3



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

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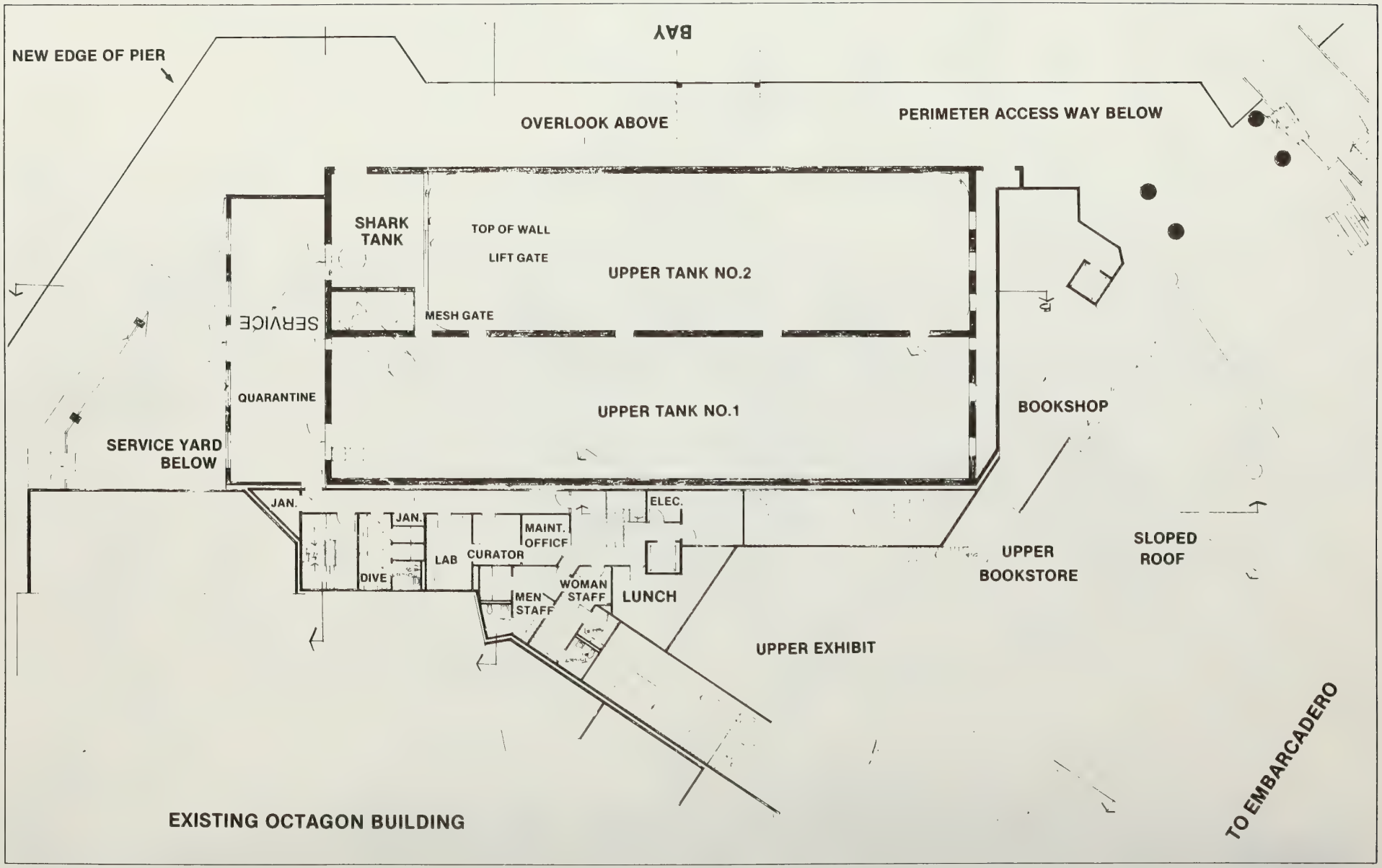
MEZZANINE LEVEL

FIGURE 4



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

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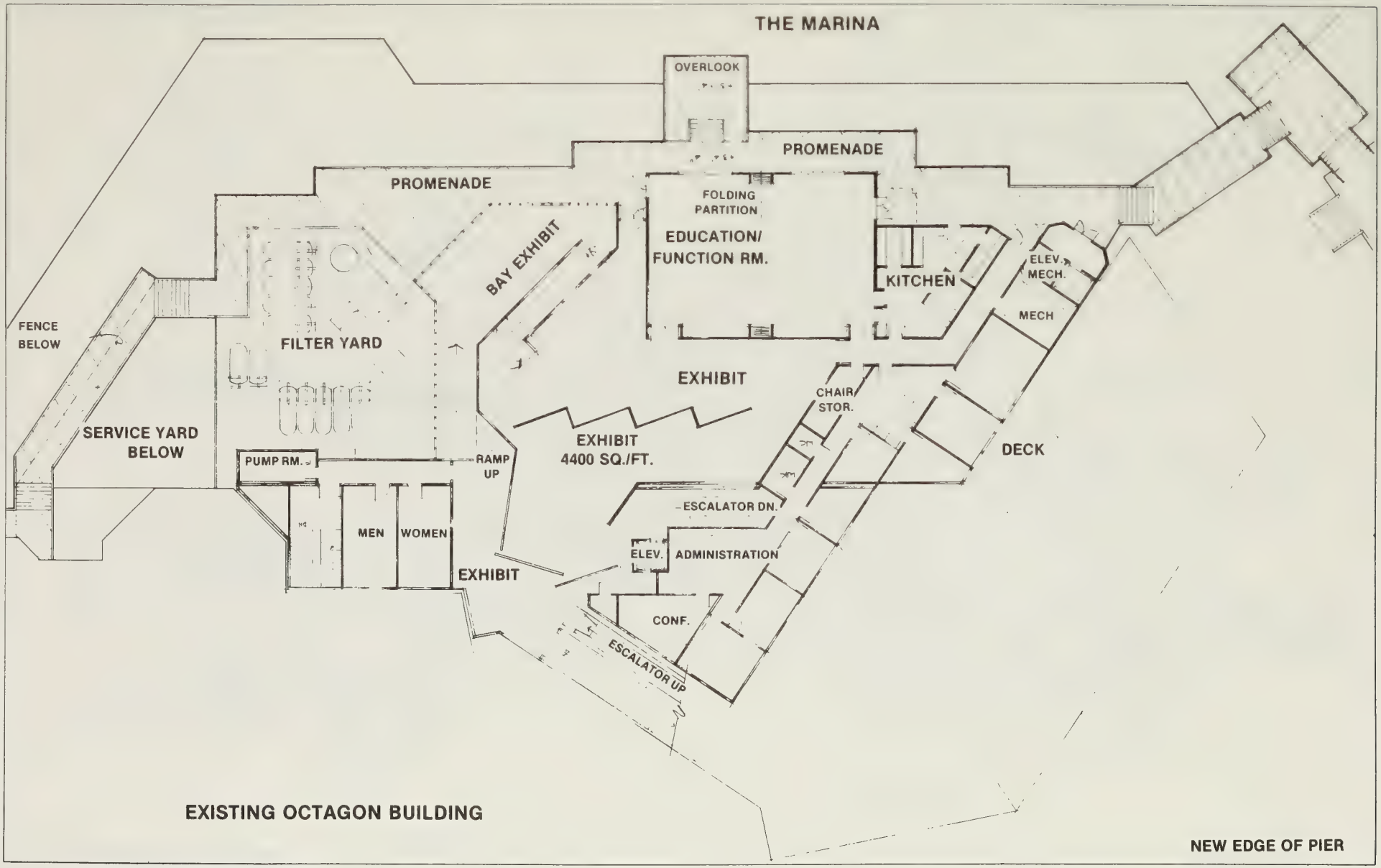
● SECOND FLOOR

FIGURE 5



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

NO SCALE

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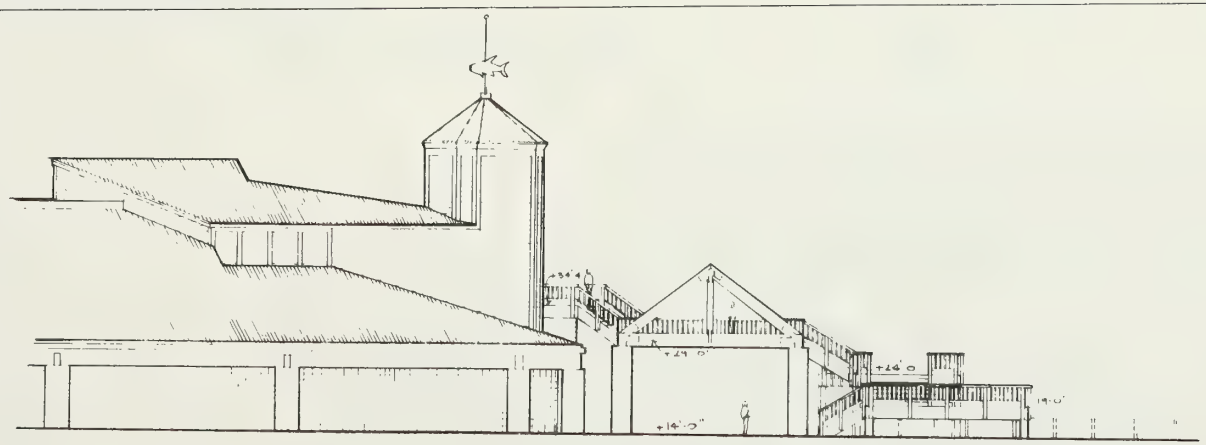
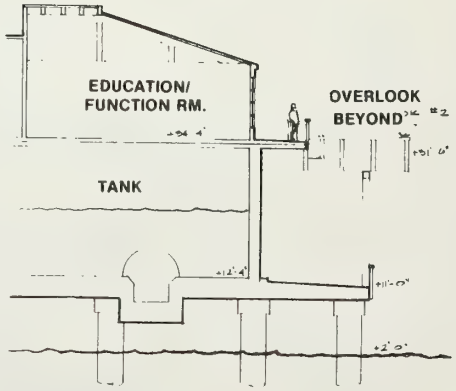
• SECTION DRAWING

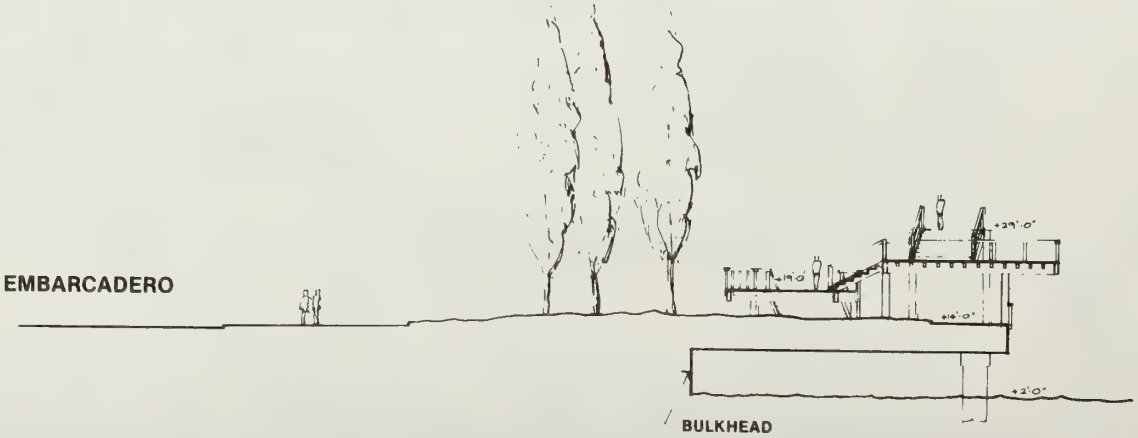
FIGURE 6



SOUTH ELEVATION STUDY AT PROMENADE



SECTION B-B



SECTION A-A

SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

NO SCALE

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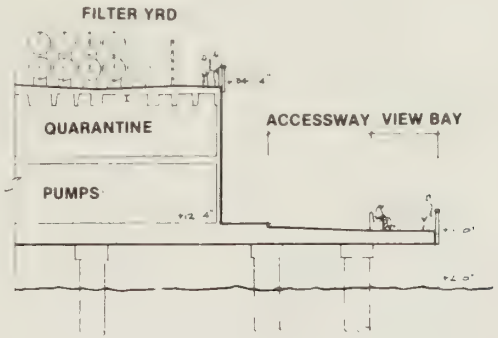
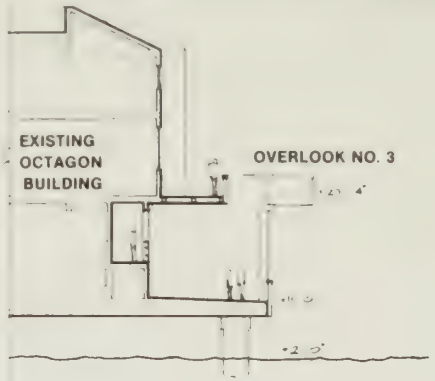
● SECTION DRAWING

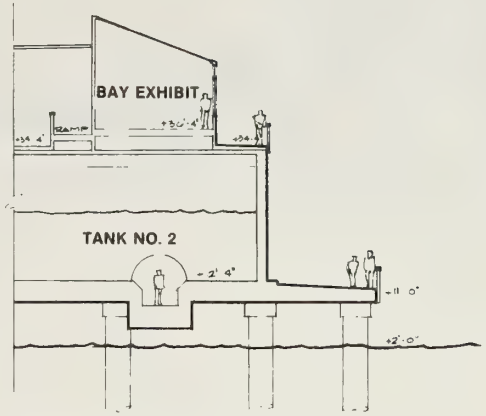
FIGURE 7



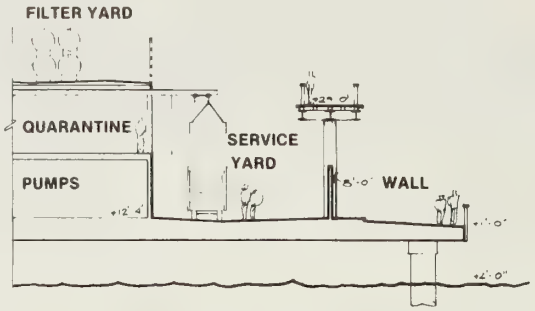
SECTION D-D



SECTION F-F



SECTION C-C



SECTION E-E

SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

NO SCALE

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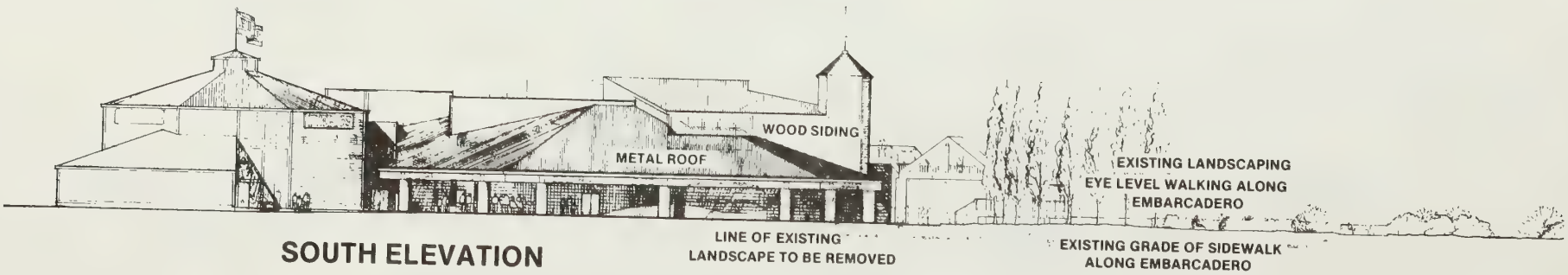
SOUTH ELEVATION

FIGURE 8



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

NO SCALE

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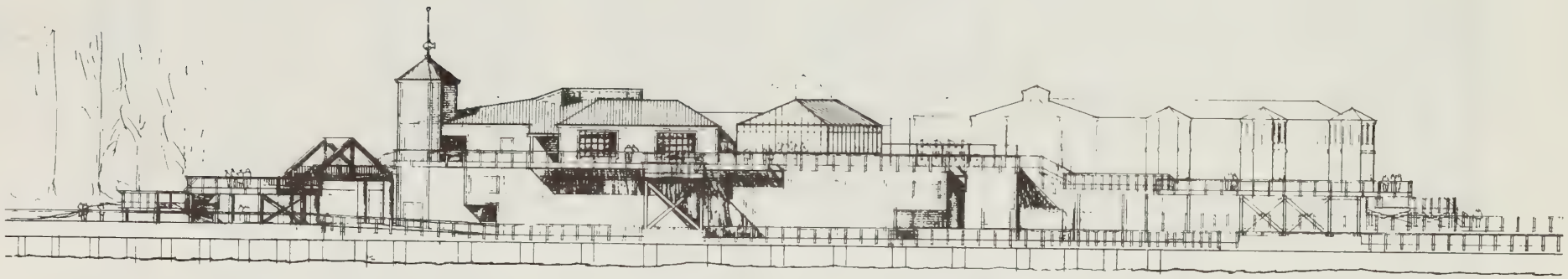
EAST ELEVATION SHOWING SECOND LEVEL PROMENADE

FIGURE 9



EAST ELEVATION SHOWING 2ND LEVEL PROMENADE

SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

NO SCALE

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The project sponsor would request an amendment of the current Pier 39 Conditional Use authorization from the City Planning Commission. Under Section 152 of the City Planning Code, one freight loading space would be required for this project. One freight loading space, which meets the minimum required dimensions under Section 154, would be provided.

On November 14, 1986, the voters of San Francisco passed Proposition M, the Accountable Planning Initiative. Proposition M establishes eight Priority Policies. These policies are: preservation and enhancement of neighborhood-serving retail uses; protection of neighborhood character; preservation and enhancement of affordable housing; discouragement of commuter automobiles, protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership; earthquake preparedness; landmark and historic building preservation; and protection of open space. Prior to issuing a permit for any project which requires an Initial Study under CEQA, and prior to adopting any zoning ordinance or development agreement, the City is required to find that the proposed project or legislation is consistent with the Priority Policies.

In addition to City Planning Commission approval, various City and State actions and approvals would be required. The project sponsor will request that the Port Commission approve the proposed aquarium, and revise the rent structure under the terms and conditions of the existing lease. The lease amendment must be approved by the Board of Supervisors.

Building and other related permits would be under the jurisdiction of the Port of San Francisco. As part of its permit review process, the Port would review the design of the building, proposed signage, and any changes to the Pier 39 garage. The Port Commission would be required to take action on any mitigation measures which would occur on or directly adjacent to Port land.

Approval would be required from the San Francisco Art Commission which reviews proposed construction on public land.

The Bay Conservation and Development Commission (BCDC) would require a permit pursuant to the McAteer-Petris Act and would be concerned with compliance with that

Act and with the San Francisco Bay Plan (in particular the Special Area Plan #1 covering the area of the San Francisco shoreline in which the project is located). BCDC would be particularly concerned with issues relating to the provision of Bay-oriented commercial recreation or Bay-oriented public assembly purposes, public access to the Bay at Pier 39, the addition of pile-supported fill in the Bay, and with impacts on the Bay and fish wildlife

and other natural resources. BCDC would inform the Port about project compliance with Section 307 of the Federal Coastal Zone Management Act of 1972. See page 38 for a description of the San Francisco Bay Plan and the San Francisco Special Area Plan No. 1.

A permit would be required from the Army Corps of Engineers (Corps) who has jurisdiction over fill, dredging and dredge spoils disposal under Section 10 of the River and Harbors Act and Section 404 of the Clean Water Act. Corps permits may also be required for construction crane erection.

In 1968, the State of California, in accordance with the Burton Act and the accompanying Transfer Agreement, transferred the administration, management, and operation of Port property to the San Francisco Port Commission. The Port Commission holds these lands in trust under the jurisdiction of the State Lands Commission which determines that the use of Port land meets public trust provisions. No permit is issued by the State Lands Commission. The SLC is kept apprised of project plans by the Port Commission.

The Regional Water Quality Control Board (RWQCB) also would be concerned with the water quality and biology impacts resulting from the project. Under powers delegated by the Environmental Protection Agency and the State Water Resources Control Board, the RWQCB would certify compliance with Section 401 of the Federal Water Pollution Control Act of 1972. A National Pollution Disposal Elimination System (NPDES) permit may also be required. A permit from the Bay Area Air Quality Management District may be required for operation of the ozone water treatment system. BAAQMD will consider the project concurrently with other agencies.

If the project is found to affect an endangered or threatened wildlife species, a formal consultation with the U.S. Fish and Wildlife Service would be required under Section 7 of the Endangered Species Act and the Fish and Wildlife Coordination Act.

5. PROJECT SCHEDULE AND COSTS

The project sponsors anticipate completion of the project design by mid-1988. Construction would commence once permits were issued. The project would take approximately 14 months to complete; three additional months would be needed to prepare the fish tank for occupants. The project sponsors estimate construction, equipment and pre-opening costs of $14,000,000.

III. ENVIRONMENTAL SETTING

A. LAND USE AND ZONING

1. LAND USE

Project Vicinity

The project site is located in the Fisherman's Wharf area of the Northern Waterfront District. The site is north of The Embarcadero between Stockton Street and Grant Avenue and between Piers 35 and 41. Telegraph Hill is to the south of the project. For many years, the Fisherman's Wharf area was dominated by a combination of maritime commercial uses such as fish handling and other uses serving the San Francisco commercial fishing fleet, and other industrial uses. Since the mid-1960s, tourist-serving uses, including hotels, specialty retail complexes and entertainment establishments, have become the dominant uses off of Port property. However, San Francisco is still the largest center of fishing on the West Coast and Fisherman's Wharf is the center of commercial fishing in San Francisco.

Pier 39 is a mixed-use development operated by Pier 39 Limited Partnership. The footprint of the pier (from the seawall) is 261,676 square feet. On the pier is a variety of restaurants, retail stores, and a 240-seat theatre, totaling 198,000 gross square feet. The buildings and pedestrian corridor were constructed with the use of old wood materials from previous pier and wharf buildings. Open areas within Pier 39 contain a small outdoor theatre for shows and a carousel. At the end of the pier is an observation landing providing a view of the Bay including the East Bay Hills, the San Rafael Bridge, Alcatraz Island, and the Golden Gate Bridge. There is a service road surrounding the pier which provides service access to businesses as well as continuous pedestrian access around the pier. To the southeast of Pier 39 is Pier 35, a terminal for large luxury liner cruise ships. To the west is Pier 41 which is a terminal for chartered and scheduled boat cruises of the Bay. Between these piers and The Embarcadero lies landscaped open space with a boardwalk, flowerboxes, lawn and benches.

As part of the approval of Pier 39 in 1976, the sponsor was required to provide and maintain a public park in this area, between Pier 35 and Powell Street. The 40,000 square feet closest to Pier 35 has not yet been improved.

Across the Embarcadero from the aquarium site is the Pier 39 parking garage (bounded by The Embarcadero, Powell Street and Beach Street). A pedestrian overpass links the garage to Pier 39 over the Embarcadero. Within two to three blocks of the project are a variety of two and three story mixed-use office buildings, hotels, and the North Point Apartment complex (bounded by North Point, Bay, Powell and Grant) with 514 units (see Figure 10, page 31).

Fisherman's Wharf

- In the past 40 years San Francisco has lost its dominant maritime position in the Bay Area (primarily due to the decline of maritime industrial uses and employers) and the appearance of the Wharf has turned from that of a very active fishing port to that of an area with tourism as its primary use. However, commercial fishing continues to be a major activity around the Hyde Street pier and Fish Alley, and the Port has maintained a consistent policy of using that area for fishing related business. In the 1960s, the Old Ghirardelli Chocolate Factory, the Cannery and other historic buildings were refurbished for retail use. Restaurants, which were already established, increased their business and many new ones were started. There also was an increase in the number of hotels, and since 1980 the Fisherman's Wharf area has consistently had the highest hotel occupancy rate of any district in the City (the Super 8 and Clarion Hotels, approved September 1987, will add 568 rooms or 21.8% to the Northern Waterfront area). Tourism in the Fisherman's Wharf area has grown into a multi-million dollar a year business providing jobs for residents and tax revenues for the City. But with such growth, there have been resulting changes in the area which prompted the City Planning Department to study the Fisherman's Wharf area in greater detail. The Northern Waterfront Findings Report (March 1987), analyzed land use patterns and traffic and transportation related issues in the Northern Waterfront area. The decrease of fishing related industry, contrasted with the influx of tourism, led the report to conclude that the Fisherman's Wharf area is "losing its attraction because of physical deterioration and lack of an identity and unified image." For a more detailed description of current planning activity in the area, see page 71 of this EIR.

San Francisco

The City of San Francisco has many recreational and educational establishments in addition to those at Fisherman's Wharf. These establishments are visited by both residents and visitors. They include maritime-related attractions located at Fort Mason, cultural facilities located throughout the City, the San Francisco Zoo in the southwest corner of San Francisco, and a concentration of museums and other attractions, including the Steinhart Aquarium, in the east end of Golden Gate Park.

2. ZONING

The project site is located in the C-2 (Community Business) zoning district, which encompasses most of the Fisherman's Wharf area north of Bay Street to the piers (see Figure 11, page 32). In a C-2 District, professional and business offices, retail business and personal services, residential and hotel uses are permitted as principal uses.

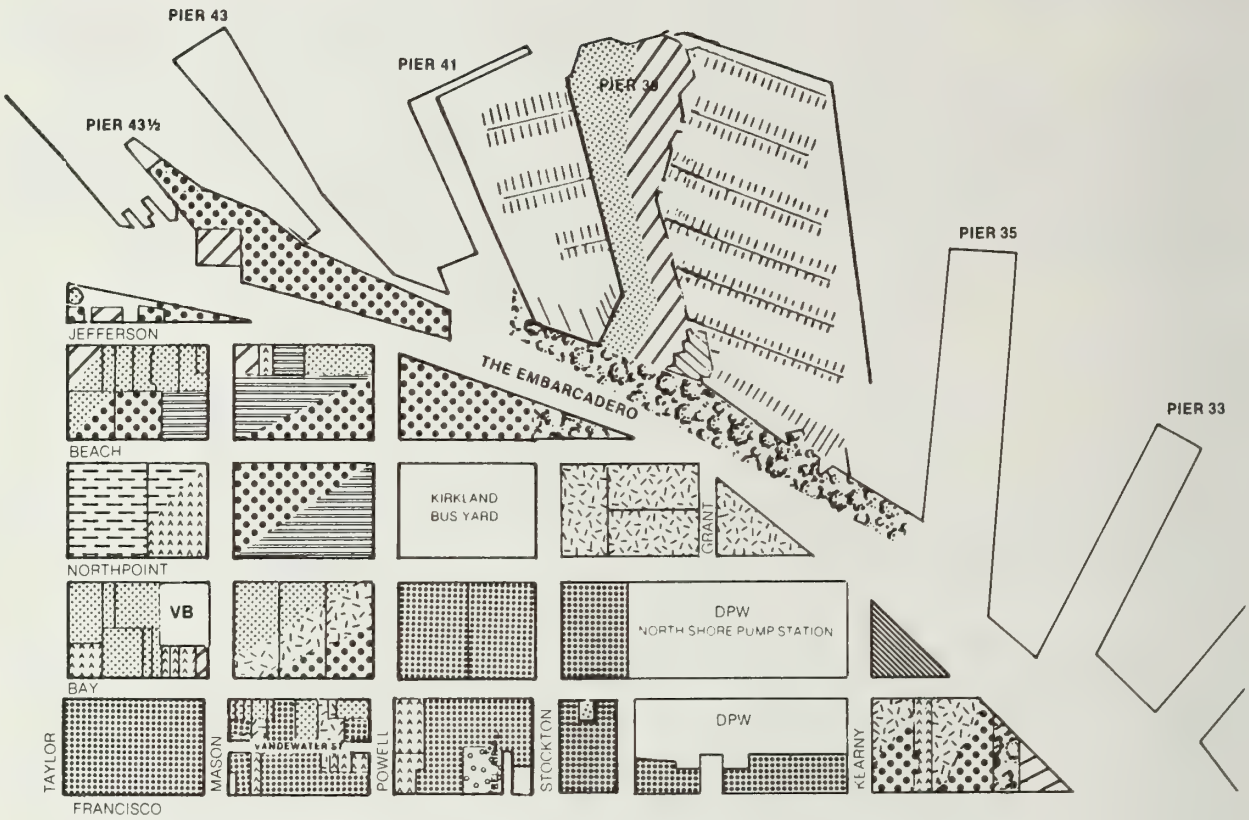
The project site is also located within the Northern Waterfront Special Use District No. 1, described in Section 240.1 of the City Planning Code. Development on this site is subject to the provisions of this special use district which supersede the provisions of the C-2 zoning district. The applicable provisions of Sections 240.1 state that a Conditional Use authorization is required for all uses other than, "waterborne commerce and navigation, and industrial, commercial and other operations directly related to the conduct of waterborne commerce or navigation."

The project site is in the 40-X Height and Bulk District which controls the entire Northern Waterfront area. In this district the maximum allowable building height is 40 feet above the street. There is no requirement regarding maximum bulk.

Off-street parking is required for commercial uses in the C-2 District by Section 151 of the City Planning Code. For retail space, the Code requires one space for each 500 square feet of occupied floor area up to 20,000 square feet, where the occupied floor area exceeds 5,000 square feet, plus one for each 250 square feet of occupied floor area in excess of 20,000 square feet. For restaurants, the City Planning Code requires one parking space for each 200 square feet of occupied floor area, where the occupied floor

● EXISTING LAND USES IN THE FISHERMAN'S WHARF AREA

FIGURE 10



LEGEND

- Residential
- Retail
- Restaurant
- Hotel
- Office
- Other Commercial
- School
- Public Parking
- Private Parking
- Under Construction
- VB Vacant Building (Hotel Approved for This Lot)
- Proposed Aquarium Site
- Open Space
- Gas/Car Wash

SOURCE: EIP ASSOCIATES

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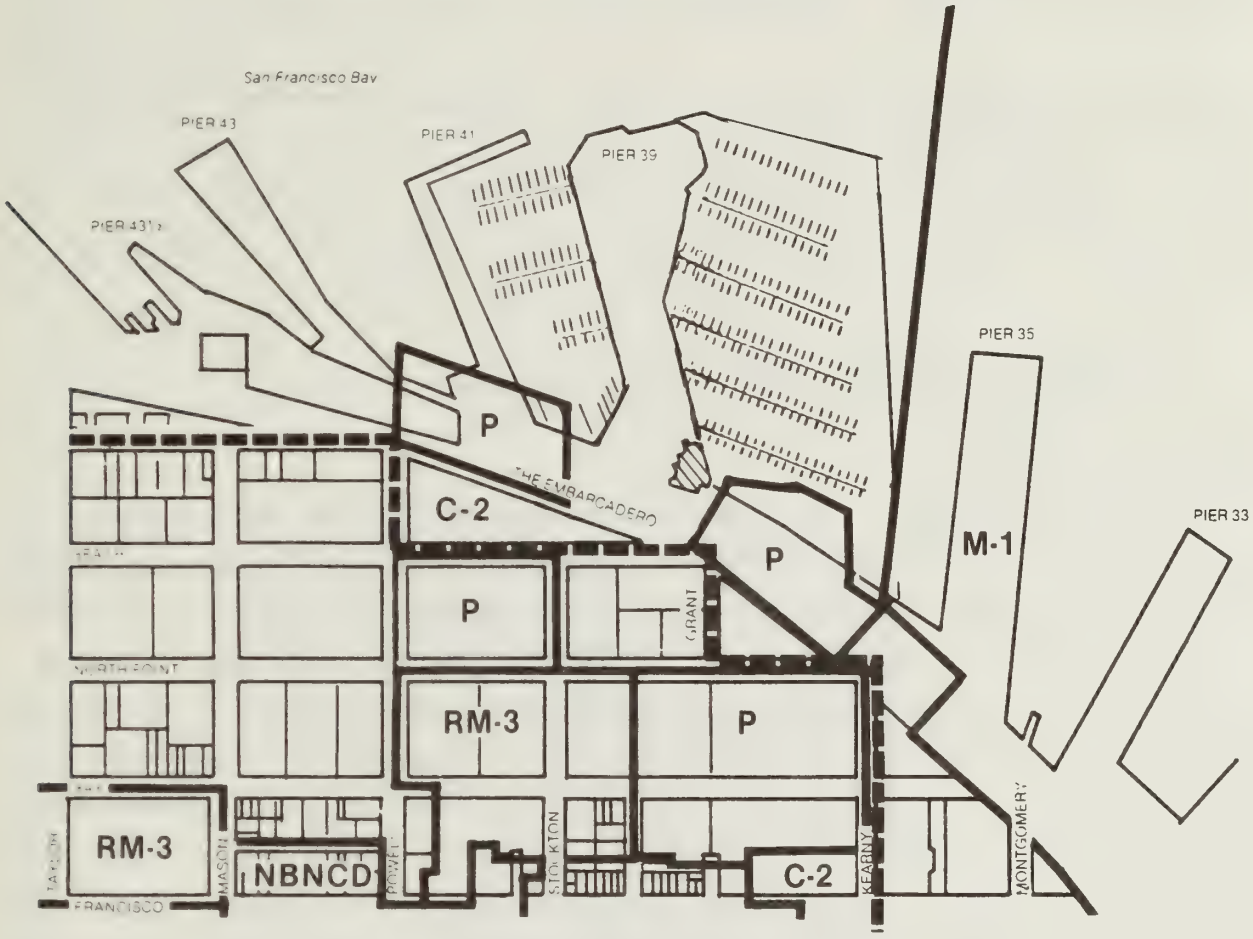
● PLANNING CODE USE DISTRICTS

FIGURE 11



LEGEND

P	Public Use
C-2	Community Business
RM—3	Residential, Mixed: Medium Density
▬▬▬	Port of S.F. Jurisdiction
NBNCD	North Beach Neighborhood Commercial District
M-1	Light Industrial

SOURCE: EIP ASSOCIATES

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area exceeds 5,000 square feet. For theatre space, the Code requires one parking space for each eight seats.

Section 152 of the City Planning Code includes requirements for off-street loading for projects in C-2 Districts. One off-street loading space is required for retail business between 10,001-60,000 gross square feet. The off-street loading space must have a minimum length of 25 feet, a minimum width of 10 feet and minimum vertical clearance of 12 feet.

3. SAN FRANCISCO MASTER PLAN CONSIDERATIONS

San Francisco Master Plan

● The San Francisco Master Plan contains objectives and policies which apply to the proposed project. Staff found no apparent inconsistencies between the proposed project and individual objectives and policies. There are no objectives or policies in the Master Plan which dictate a specific use on this specific site. This does not, however, lead to a conclusion that the proposed project, on balance, is in conformance. The Master Plan gives general policy direction, rather than dictating a single conclusion. It contains goals which are both environmental and non-environmental in nature. In their consideration of the project, decision-makers will have to consider all the various objectives and policies in order to determine whether the project, on balance, conforms to the Master Plan. This determination will be made by the City Planning Commission as part of its review of the project's Conditional Use Authorization and under the provisions of Proposition M. The staff report for the project will include an analysis of conformity with Master Plan policies as well as the staff recommendation.

Commerce and Industry Element

Objective 3, Policy 1: "Promote the attraction, retention and expansion of commercial and industrial firms which provide employment improvement opportunities for unskilled and semi-skilled workers."

Objective 5, Policy 4: "Avoid actions which may serve to displace desired existing maritime uses."

Objective 5, Policy 7: "Restore the fishing industry in San Francisco."

- **Objective 8, Policy 1:** "Guide the location of additional tourist-related activities to minimize their adverse impacts on existing residential, commercial and industrial activities."

Northeastern Waterfront Plan Element

The Fisherman's Wharf Area, as described in the Plan, is bounded by Van Ness Avenue and Bay Street and includes the piers west of Pier 35. The proposed project would lie on the eastern side of this area.

Overall Goal: "The overall goal of the Plan is to create a physical and economic environment in the Northeastern Waterfront area which will use the area's resources and potential in the manner which will best serve the needs of the San Francisco community." In order to accomplish this goal, the dominant planning principles of this Plan are: "1) provide for those uses which positively contribute to the environmental quality of the area and contribute to the economic health of the Port and the City, 2) preserve and enhance the unique character of the area, and take advantage of the unique economic opportunity provided by San Francisco Bay, and 3) provide the maximum possible visual and physical access to San Francisco Bay while minimizing the adverse environmental impacts of existing and new activity."

Land Use, Objective 2, Policy 1: "Limit additional uses which generate a concentration of activity during the same peak periods, in areas which are heavily impacted with such uses."

Land Use, Objective 2, Policy 2: "Diversify activities to encourage the use of the Northeastern Waterfront by a broad spectrum of the population."

Land Use, Objective 2, Policy 3: "Encourage land uses having different peak periods of activity within each sub-area of the Northeastern Waterfront to contribute to the area's diversity, to expand the period of use, to decrease peak period traffic congestion, to facilitate efficient use of the transit system and to preserve and enhance the environmental quality of the waterfront."

Land Use, Objective 2, Policy 4: "Give priority to the development of public open space in any non-maritime development adjacent to, or over, the water."

Land Use, Objective 2, Policy 5: "Emphasize water-related recreation, Bay-oriented commercial recreation and Bay-oriented public assembly uses in non-maritime development adjacent to, or over, the water."

Urban Design, Policy 3: "Use continuous planting and other ground surface treatment to physically and visually link the waterfront with adjacent inland areas."

Urban Design, Policy 4: "In major pedestrian areas (such as the Fisherman's Wharf and Ferry Building areas), develop generally continuous ground floor retail or other pedestrian-oriented uses."

Urban Design, Policy 5: "Permit non-maritime development bayward of the seawall only if the following qualifications are met: (a) Maximum feasible public access is provided to the water's edge; (b) Important Bay views along the Embarcadero and level inland streets are preserved and improved."

Recreation and Open Space, Policy 5: "Provide overlooks and public viewing areas with convenient pedestrian access wherever possible. Every attempt should be made to provide such viewing facilities in areas of maritime and fish processing activities without interfering with the operation of those activities. Remove bulkhead buildings between piers wherever feasible in order to construct such overlooks and to open views."

- **Fisherman's Wharf Area, Objective 11, Policy 4:** "Encourage a use of materials and design of new and existing buildings and public improvements which enhance the area's historic maritime character. Require that any identification signs be subdued and harmonious with this character. Prohibit garish, flashing and general advertising signs."

- **Fisherman's Wharf Area, Objective 11, Policy 5:** "Encourage the development of a small-boat marina in the Pier 41 to 37 area with any parking provided inland of The Embarcadero."

- **Fisherman's Wharf Area, Objective 12:** "To strengthen the area's attraction as a water-oriented commercial recreation and public assembly center by expanding the area of this

activity to the east, limiting additional concentration of such activities west of Powell Street and developing uses which would generate activity at times other than the existing peak periods."

- **Fishermans Wharf Area, Objective 12, Policy 1:** "Permit additional water-oriented commercial recreation and public assembly (except hotels and boatels) development such as restaurants, entertainment and specialty shops in the Pier 41 to 37 waterfront area in conjunction with a major waterfront park along the seawall. Any necessary parking should be provided inland of The Embarcadero. The park should include a minimum of 5 to 6 acres of water-oriented landscaped open space unrelated to commercial uses. Commercial uses should be water-oriented and complementary in scale to those in the rest of the Fisherman's Wharf area. Platforms constructed to support commercial uses should not cover a greater amount of the Bay than 50% of any previously existing fill (Piers 37, 39 and 41) which is removed. The Embarcadero should be narrowed in this area to accommodate the development of the waterfront park."

- **Fisherman's Wharf Area, Objective 12, Policy 4:** "Balance existing commercial recreation and public assembly uses which generate most activity in summer, on weekends and during the evening, with uses, such as offices and residences, that would generate activity during other periods, thereby promoting the vitality and use of the area without substantially contributing to congestion. In particular, promote the development of housing on inland sites wherever possible."

- **Fisherman's Wharf, Objective 14, Policy 1:** "Develop generally continuous public pedestrian access to the water's edge, excepting areas occupied by maritime activities."

Urban Design Element

The Urban Design Element of the San Francisco Master Plan contains policies and principles which may be used to evaluate the proposed project.

Objective 1, Policy 1: "Recognize and protect major views in the City with particular attention to those of open space and water."

Objective 1, Policy 4: "Protect and promote large-scale landscaping and open space that define districts and topography."

Objective 2, Policy 3: "Avoid encroachments on San Francisco Bay that would be inconsistent with the Bay Plan or the needs of the City's residents."

Objective 3, Policy 5: "Relate the height of buildings to important attributes of the City pattern and to the height and character of existing development."

Objective 3, Policy 6: "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction."

4. OTHER ADOPTED ENVIRONMENTAL PLANS AND GOALS

Fisherman's Wharf Action Plan

The Fisherman's Wharf Action Plan (FWAP) (August 1981) contains objectives and policies to guide future development in the area within Port jurisdiction. The proposed project is located on Pier 39, in the area defined by that Plan (shown on Figure 11, page 32). The FWAP discusses Fisherman's Wharf generally and contains specific recommendations for Fish Alley-Hyde Street Pier, Pier 45 and Jefferson Street. As a result of this Plan, several policies were added to the Northeastern Waterfront Plan. An EIR was prepared on portions of the Action Plan (Amendments to the Comprehensive Plan, proposed by the Fisherman's Wharf Action Plan, Final EIR, 81.694E, certified July 14, 1983).

Fisherman's Wharf Action Plan, Objective 2: "To improve the overall economic condition and environmental quality of the wharf and to enhance its attractiveness for residents as well as tourists."

Fisherman's Wharf Action Plan, Objective 3, Policy 2: "Minimize the intensity of automobile traffic and discourage uses which rely heavily on the automobile for their success and generate automobile traffic."

San Francisco Bay Plan/San Francisco Waterfront Special Area Plan No. 1

The San Francisco Bay Plan established San Francisco Bay Conservation and Development Commission's (BCDC) policy on Bay Fill throughout the Bay. The proposed project site is in an area under jurisdiction of BCDC. The area covered by the BCDC San Francisco Waterfront Special Area Plan No. 1 is the land and water area located along the existing shoreline from the Hyde Street Pier to India Basin, including all areas within the jurisdiction of the Port of San Francisco (the line of Port jurisdiction in the project area is shown on Figure 11, page 32).

Both of these plans address the issue of fill in the Bay. As delineated by the McAteer-Petris Act, the State legislation that established the Bay Commission, BCDC can allow fill only for certain defined water-oriented uses and only under the following conditions:

"1. There is no alternative upland location for any fill authorized;

2. The fill is the minimum necessary;

3. The nature, location, and extent of any fill will minimize harmful effects to the Bay;

4. The fill is constructed in accordance with sound safety standards;

5. The fill will, to the maximum extent feasible, establish a permanent shoreline; and

6. The person proposing to fill has sufficient title to the properties in question as to be able to fill it in the manner and for the uses to be approved."[1]

San Francisco Waterfront Special Area Plan No. 1, Piers 37, 39 and 41, Policy 1: "Replacement fill in the area of Piers 37, 39 and 41 should be limited to: a) public recreation and open space in conformance with local plans for the development of a "North Point Park" in this area; and b) Bay-oriented commercial recreation that is complementary to park use (pp. 19-20)."

- Further, the Special Area Plan states that "no parking for any non-maritime use should be permitted on new or replacement fill in the area of Piers 41 and 39." No parking is proposed on new or replacement fill as part of the project.

For a discussion of the current land use planning efforts see page 70.

[1] Bay Conservation and Development Commission, "Summary of McAteer-Petris Act and Bay Plan Provisions Generally Applicable to the San Francisco Waterfront," Special Area Plan No. 1: San Francisco Waterfront.

B. URBAN DESIGN AND VISUAL QUALITY

Because of the variety of land uses in the area, the size, shape and style of buildings in the Fisherman's Wharf area tend to vary. In general, though, they are low-scale, ranging in height from one to four stories (10 to 40 feet). Within the Pier 39 complex, buildings are two and three stories and range between 30 and 40 feet in height. Some older buildings in the area which have been rehabilitated for commercial uses are long, bulky structures, often encompassing a large portion of an entire block. Ghirardelli Square and the Cannery are such examples. Some of the older buildings in the area used for restaurants or other commercial uses tend to be small (one or two stories tall, with street frontages between 25 and 40 feet long). Small scale developments are also found across from the North Point Shopping Center along Bay Street between Mason and Powell Streets, and on Taylor Street between North Point and Jefferson Streets.

There is larger scale development in the Fisherman's Wharf area, particularly to the west of the project site. The Marriott Hotel, Holiday Inn, Ramada Inn, Sheraton Hotel, Cost Plus building, Liquor Barn building, North Point Shopping Center, North Point Apartment Complex, Travelodge, Pier 39 Garage, the Anchorage Shopping Center, and the Blue Shield building are all developments in the vicinity that rise to approximately 40 feet above the street and that cover all, or a large portion, of their respective project blocks (see Figures 12-18, pages 40 to 46).

The facades of buildings in the area also vary. Brick can be found as a building material in older buildings such as Ghirardelli Square and the Cannery as well as a facade treatment on newer buildings such as the Holiday Inn, the Blue Shield Building and the Cost Plus building. Light-colored stucco, such as that found on the Marriott Hotel building, is also a facade material in the area. Others of the newer buildings in the area, including the Ramada Inn and the Sheraton Hotel, have facades of dark-colored wood siding.

In general, buildings in the area tend to have rectangular shapes, straight roof lines, and relatively little ornamentation, a style typical of older development throughout the Northern Waterfront area. Throughout most of the area, buildings are built out to the

PROJECT AREA PHOTO: VIEW LOOKING NORTHEAST FROM PEDESTRIAN BRIDGE TOWARD PIER 39 ENTRANCE

FIGURE 12

SOURCE: SQUARE ONE VIDEO

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PROJECT AREA PHOTO: VIEW LOOKING NORTHWEST ALONG THE EMBARCADERO WALKWAY

FIGURE 13

SOURCE: SQUARE ONE VIDEO

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PROJECT AREA PHOTO: VIEW LOOKING NORTHWEST ALONG THE WATERFRONT PROMENADE

FIGURE 14

SOURCE: SQUARE ONE VIDEO

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PROJECT AREA PHOTO:
VIEW LOOKING NORTHEAST ALONG BEACH STREET

FIGURE 15

SOURCE: SQUARE ONE VIDEO

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PROJECT AREA PHOTO:
VIEW LOOKING NORTH WHERE BEACH STREET MEETS THE EMBARCADERO

FIGURE 16

SOURCE: SQUARE ONE VIDEO

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PROJECT AREA PHOTO:
VIEW LOOKING NORTHWEST AT GRANT AVENUE AND THE EMBARCADERO

FIGURE 17

SOURCE: SQUARE ONE VIDEO

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PROJECT AREA PHOTO: VIEW FROM TELEGRAPH HILL

FIGURE 18

SOURCE: SQUARE ONE VIDEO

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property line. The continuous streetscape of these buildings, however, is sometimes interrupted by surface parking lots and service stations set back from the street front. Structures in the immediate project area range in age from about 5 to 75 years.

The pedestrian environment contains an assortment of food and souvenir stands. Approaching the Wharf, the area becomes cluttered with an assortment of signs, many of which are large scale and partially obstruct pedestrian views of the water and fishing activity. Trash receptacles and minimal landscaping are located along most sidewalks.

The existing Pier 39 complex is 30-40 feet high and is of reinforced concrete with wood siding used from previous pier structures. The structure to the east of the entrance adjacent to the project site has an eight-sided design with a long sloping roof and flag pole at the top. This provides a focal point to the entrance to Pier 39 and the landscaped open space surrounding the structure along The Embarcadero.

Pier 39 is visible from points east and west along The Embarcadero. It is especially visible from the west because of surface parking lots and open boardwalk areas extending from Pier 39 to Pier 43 1/2, where there are few objects to obstruct the field of view. From the east, along the Northern Waterfront Park, it is also visible, but becomes increasingly screened because of the masts and rigging of boats rising above the boardwalk level, and trees and shrubs along the Park walkway. Pier 39 is open to view from the pedestrian overpass that extends from the site southwest to the Pier 39 Garage. The pedestrian overpass is elevated about 30 feet above The Embarcadero.

The complex of buildings comprising Pier 39 is visible from vantage points on Telegraph Hill, due south of the site, and to a lesser degree from the more distant Russian Hill. The importance of the octagonal building as an entry focal point to Pier 39, emphasized by its eight sided shape and sloping roof, may be observed from Telegraph Hill.

Views from the project site encompass a variety of visual conditions. To the east and adjacent to the Northern Waterfront Park, boats and yachts tied to their slips emphasize a maritime character within the setting. Boat masts, rigging and antenna rise above the pedestrian walkways providing vertical dimension to the field of view. To the southeast

and southwest, views encompass the blocky structures characteristic of buildings along the Embarcadero as described above, such as the Blue Shield building and Pier 39 Garage. To the west, buildings and restaurants of the Fisherman's Wharf area may be seen in the distance.

C. TRANSPORTATION

Primary intra-city access to and from the project site occurs on North Point Street, Bay Street, Van Ness Avenue, and the Embarcadero, which are designated "Major Thoroughfares" in the Transportation Element of the City's Master Plan. Jefferson Street and Beach Street are identified as recreational streets.[1] Regional access to and from the North Bay is available via the Golden Gate Bridge and U.S. 101 with freeway entrances/exits at the western ends of Marina Boulevard and Richardson Avenue. Regional access to and from the Peninsula and the East Bay is available via the Embarcadero Freeway (I-480) and either U.S. 101 or I-80 (Bay Bridge). Freeway ramps are located at Broadway and Sansome/Battery Streets and on Washington and Clay streets at Davis Street. Bay Street is used as a weekday peak period auto route for travel between downtown San Francisco and the North Bay as well as a primary access route for the Northern Waterfront.

All or portions of Jefferson, Beach, North Point, and Bay Streets and The Embarcadero are designated "Transit Preferential Streets" in the Master Plan.[2]

Sections of Beach and Bay Streets are designated as "Preferred Commute Bicycle Routes" in the Transportation Element of the City's Master Plan. The Embarcadero is a Class I Bikeway; Beach Street is a Class III Bikeway. Bay Street is part of the Preferred Commute Bike Route.

EXISTING TRAFFIC

Existing Levels of service (LOS) and volume-to-capacity ratios (V/C ratios) were computed for eight Northern Waterfront intersections in the weekday and weekend PM peak hours.[3] All study area intersections operate at LOS "A," "B," or "C" during the weekday PM peak hour (5:00 PM - 6:00 PM).

On weekends, two intersections operate at LOS "D" or worse during the PM peak hour (3:00 - 4:00 PM): Powell/Embarcadero/Jefferson (LOS "E"), and Embarcadero/Beach (also LOS "E"). At Embarcadero/Beach, the left turn from eastbound Beach Street onto northbound Embarcadero operates at LOS "C" on weekdays and LOS "F" on weekends. This single movement represents about six percent of the total weekday peak hour volume, and about 11 percent of the intersection's weekend peak hour volume. The remaining traffic through the intersection experiences LOS "A" conditions on both weekends and weekdays, with little or no delay.

There is localized congestion along Beach Street and The Embarcadero on weekends during the tourist season. Congestion on The Embarcadero results from long queues of vehicles waiting to enter the Pier 39 garage, heavy pedestrian traffic at the Powell/Jefferson/Embarcadero intersection, and the unusual geometries of this intersection. Heavy traffic entering the study area from the west is the primary cause of congestion along Beach Street. This heavy traffic flow causes substantial delays at the Powell/Beach intersection. The capacity of Beach Street is significantly reduced by the storage of MUNI buses on the southern curb of the street between Powell and Stockton Streets. Figure 19, page 51, shows existing weekday intersection performance and Figure 20, page 52, shows existing weekend intersection performance.

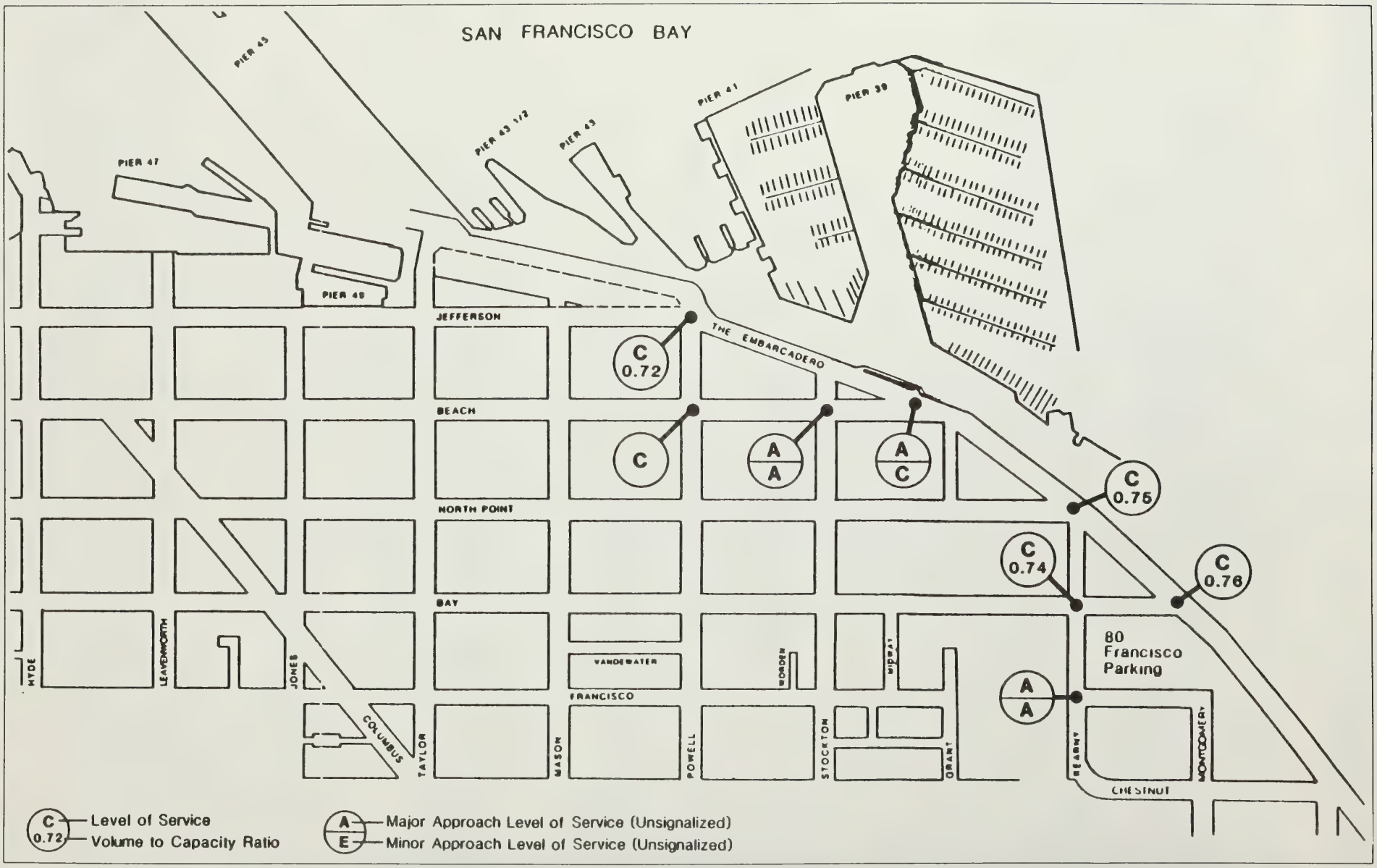
TRANSIT OPERATIONS

One MUNI route, the 32-Embarcadero, directly services the project site along the Embarcadero while three others — the 39-Coit, the 15-Third, and the 42-Downtown Loop -- all pass within one to four blocks of the project site. The 19-Polk, the 30-Stockton, the 47-Van Ness, the 49-Van Ness Mission pass through or terminate in the Northern Waterfront area, but are too far from the project site to provide convenient access.

The 32-Embarcadero operates between Fisherman's Wharf and the Caltrain depot via The Embarcadero, while the 19-Polk operates between Fisherman's Wharf, the Civic Center, Potrero Hill, and Hunter's Point. The 39-Coit runs between Fisherman's Wharf and Telegraph Hill, and the 15-Third provides service between Fisherman's Wharf, the downtown Financial District, and southern San Francisco via Third Street. The 42-Downtown Loop services a closed loop that includes Fisherman's Wharf, the Financial District, the South of Market area, and Van Ness Avenue. The 30-Stockton, which cuts through the Northern Waterfront along Columbus Avenue, operates between the Marina, Chinatown, and the SP Caltrain depot. The 47- and 49-Van Ness routes enter the Western end of the Northern Waterfront along Van Ness Avenue, terminating at North Point Street. All of these lines except the 39-Coit serve BART stations along the Market Street corridor.

● EXISTING WEEKDAY INTERSECTION PERFORMANCE PM PEAK HOUR

FIGURE 19



SOURCE: DKS ASSOCIATES

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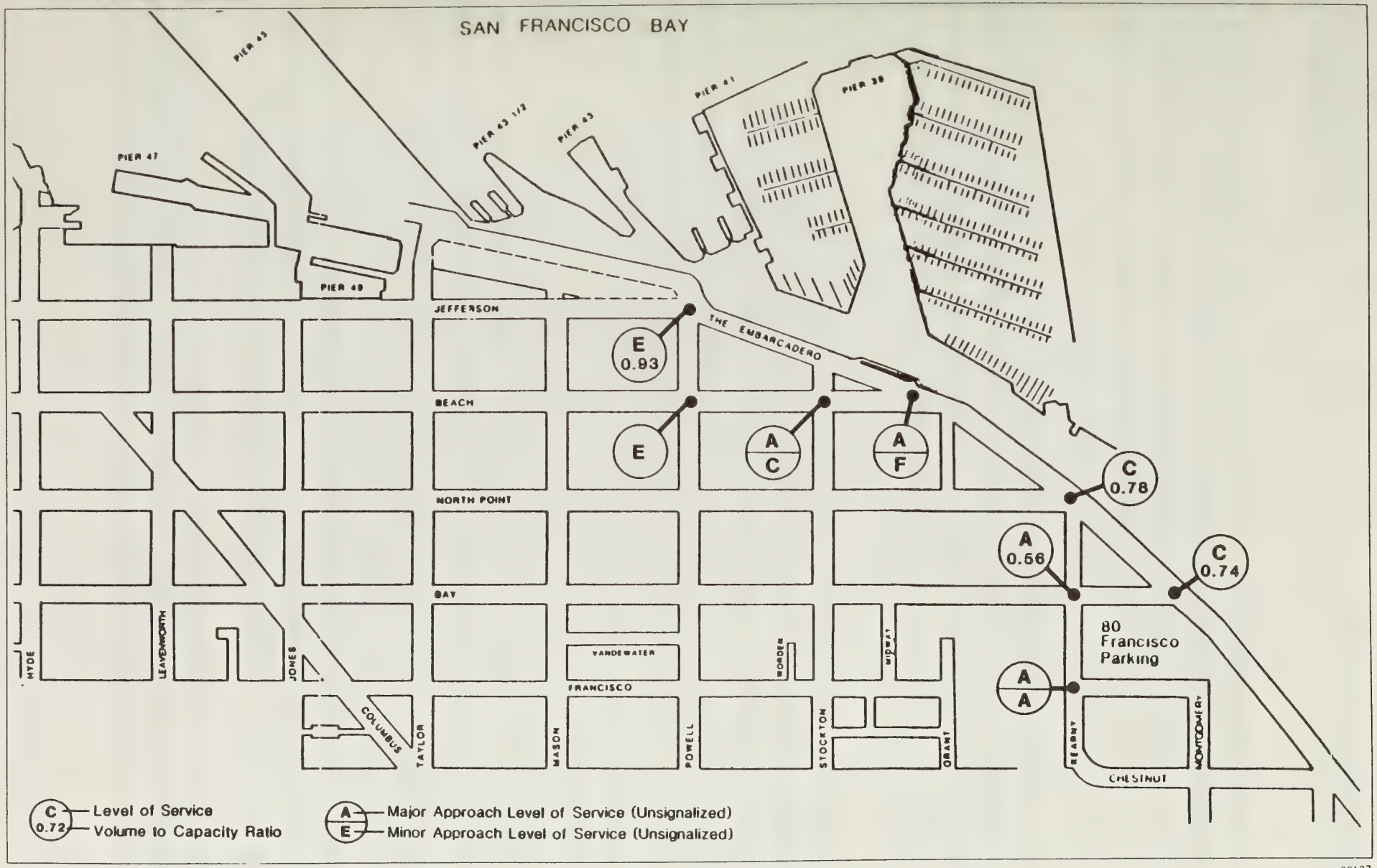
● EXISTING WEEKEND INTERSECTION PERFORMANCE PM PEAK HOUR

FIGURE 20



SOURCE: DKS ASSOCIATES

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In addition to these routes, the Powell-Mason cable car line terminates at the intersection of Taylor and Bay Streets within five blocks of the project site. The cable car serves Fisherman's Wharf, Chinatown, the Union Square shopping area and the Powell Street BART station. Golden Gate Transit operates weekday commute period bus service between North Bay and downtown San Francisco along North Point Street.

Existing transit ridership information indicates that with the exception of the cable cars, transit service within the Wharf is generally underutilized. Weekday PM peak period load factors for the eight Muni lines serving the Wharf average approximately 0.39 passengers per seat. The cable cars on the other hand are very full with a load factor of about 1.77 passengers per seat in the PM peak period.[4]

Specific data were collected regarding cable car ridership on weekends.[5] Patrons were observed boarding and alighting cable cars between 10:00 AM and 6:00 PM at the two terminals located at Beach/Hyde and Bay/Taylor. The peak hourly patronage occurred between 12:00 and 1:00 PM with about 1,760 riders. Additionally, waiting times to board a cable car at the Beach/Hyde turnaround were surveyed. Between 12:00 noon and 6:00 PM, cable car waits ranged between 50 and 65 minutes. Wait times observed at the Bay/Taylor turnaround were somewhat less, averaging between 30 to 45 minutes throughout the survey.

PEDESTRIANS

Based on site visits conducted by DKS Associates during the afternoon of a typical weekend (3:00 - 5:00 PM on a Saturday) and during the PM peak period (4:00 - 6:00) of a typical weekday, the following observations were made.[6]

During the weekday PM peak period (4:00 - 6:00), pedestrian activity west of Pier 39 includes pedestrian flows generally in the unimpeded and impeded range. (Pedestrian Flow Regimes are defined and pedestrian counts are provided in Appendix B.)

East of Pier 39 on weekdays the heaviest pedestrian traffic occurs during the noon hour, when the sidewalk adjacent to the Embarcadero reaches impeded conditions. During the weekday, PM peak period conditions east of Pier 39 are in the open range. The effective

width of these sidewalks (excluding landscaping, parking meters, and other obstructions) is 12 feet east of Pier 39. Between Pier 39 and Powell Streets, the total effective sidewalk width is about 40 feet, including the sidewalk adjacent to the street, the sidewalk nearest the water, and the 20-foot wide pedestrian walkway in between these two sidewalks.

The heaviest pedestrian activity in the Northern Waterfront study area occurs on weekends west of Pier 39. Conditions reach impeded range along The Embarcadero between Pier 39 and Powell Street. The Embarcadero north sidewalk at Powell Street is constrained during weekend afternoons. East of Pier 39, weekend pedestrian activity is lower, with conditions in the unimpeded range.

PARKING

Several surveys of weekend parking occupancy have been performed in the Northern Waterfront over the past fifteen years. Recent surveys (1985-86) conducted by San Francisco Department of City Planning[7] indicate that on-street parking is 101% occupied and off-street parking in lots and garages in the Northern Waterfront are 85% occupied on typical Saturdays. Surveys of parking occupancy conducted in 1973, 1976 and 1981[8] in the Fisherman's Wharf area show similar conditions on weekends.

Weekdays off-street parking is generally more available. On-street parking is fully utilized. A survey of on-street parking indicated 98% occupancy during weekday afternoons,[9] while two 1987 weekday off-street parking surveys yielded occupancy rates of 56% and 70%.[10]

The Pier 39 garage, which has approximately 937 parking spaces,[11] was included in the two 1987 surveys. The garage was 61% occupied in the March, 1987 survey with 570 of the 937 spaces occupied. In the July, 1987 survey, the occupancy rate was 86% with 810 of the 937 spaces occupied. On July 5, 1988, a survey was again taken in which it was found that 774 of the 937 spaces were occupied, or 83%.

On-street parking conditions were surveyed in the areas immediately south of the Northern Waterfront. During weekday afternoon, weekday night and weekend afternoon periods, on-street parking was found to be fully utilized. There is no underutilized on-

street parking within the Northern Waterfront and on its perimeter. As vehicles leave spaces, they are immediately taken, indicating a large latent demand for the convenience and low cost of this parking.

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[1] A Major Thoroughfare is defined as a crosstown thoroughfare whose primary function is to link districts within the City and to distribute traffic from and to freeways. The route is generally of city-wide significance.

[2] Department of City Planning, City and County of San Francisco, Transportation: An Element of the Master Plan, January, 1983. Transit Preferential Street is defined as an important street for transit operations where interference with transit vehicles by traffic should be minimized.

[3] Traffic counts conducted by DKS Associates, 1986 and 1987.

[4] Based on conversations and data provided by Bill Wycko and Rebecca Kohlstrand, San Francisco Department of City Planning, August, 1986. Bus boarding and alighting data based on route profile reports prepared for MUNI, Spring, 1984 and Department of City Planning Board and Alighting Counts, Spring, 1986. The cable car system was not in operation in Spring, 1984. Cable car data from MUNI Information Office and Department of City Planning.

[5] Cable Car Survey conducted by DKS Associates, March 29, 1986.

[6] Site visits and pedestrian counts made by DKS Associates on March 26, 1986; March 29, 1986; March 18, 1987; March 21, 1987; July 9, 1987; August 8, 1987.

[7] Surveys conducted by San Francisco Department of City Planning, 1985-86, provided by Bill Wycko, transportation planner, Department of City Planning, January, 1987. Surveys show 1,590 on-street parking spaces and 4,875 off-street spaces in the Northern Waterfront study area.

[8] North Point Park/Marina Final EIR, EE74.368, San Francisco Department of City Planning, Certified August, 1976, pages 83 and 84. Data for 1973 from:

- "A Study of Vehicular and Pedestrian Traffic in the Fisherman's Wharf Area," Fisherman's Wharf Merchants Association, by Robert E. David, September 18, 1973. Indicated parking was a problem at peak periods, but somewhat available during weekdays.

Data for 1976 from:

- San Francisco Department of Public Works and Department of City Planning surveys made on the weekend after Labor Day, 1975 and on a weekday during the same week. Indicated that on-street parking had very high occupancy rate on weekdays and weekends. Also found that off-street parking had relatively high occupancy, although some lots in the central area of Fisherman's Wharf had lower occupancies.

Data for 1981 from:

- Fisherman's Wharf Action Plan: Transportation Impact Analysis, Case Study No. 81.694E, San Francisco Department of City Planning, by DKS Associates, January, 1982. Indicates that on- and off-street parking was over 90% occupied.

[9]Survey conducted by EIP Associates, May 25, 1985. The survey found 872 cars parking in 891 on-street spaces in the central portion of the Northern Waterfront.

[10]Surveys conducted by DKS Associates, March 23, 1987, and July 9, 1987. The March survey indicated 56% occupancy, and the July survey found 70% occupancy.

[11]Survey count conducted by DKS Associates on July 5, 1988. The survey counted 919 striped parking spaces and 18 unstriped spaces (located on the first floor on the southeast corner).

D. AIR QUALITY

The Bay Area Air Quality Management District (BAAQMD) operates a regional monitoring network that measures the ambient concentrations of six air pollutants: ozone (O3), carbon monoxide (CO), total suspended particulates (TSP), lead (Pb), nitrogen dioxide (NO2), and sulfur dioxide (SO2). On the basis of the monitoring data, the Bay Area, including San Francisco, currently is designated a non-attainment area with respect to the federal ozone and CO standards. A three-year summary of the data collected at the BAAQMD monitoring station nearest the project sites (about four miles southeast at 900 23rd Street) is shown in Appendix C, page A-49, together with the corresponding federal and/or state ambient air quality standards. In 1987, there was one violation of federal and State eight-hour CO standards. In 1986, there were two violations of the federal and State eight-hour average CO standard and five violations of the previous state 24-hour average TSP standard. In 1985, there were three violations of the State and federal eight-hour CO standard, and five violations of the previous state 24-hour average TSP standard.[1]

BAAQMD has conducted several CO "hotspot" monitoring programs in the Bay Area, including two in San Francisco. One CO monitoring program was conducted during the winter of 1979-80 and included the intersection of Washington and Battery Streets in San Francisco, about one mile southeast of the site. The high eight-hour average concentration was 10.1 ppm, which violated the 9-ppm state and federal standards by 1.1 ppm. The high one-hour average concentration of 15 ppm did not violate the 20-ppm state standard or the 35-ppm federal standard. Another CO monitoring program was conducted during the winter of 1980-81 and included the San Francisco intersections of Geary and Taylor Streets, about 1.3 miles south of the site, and 100 Harrison Street at Spear, about two miles southeast of the site.[3] At Geary and Taylor the observed high eight-hour average concentration was 11.5 ppm, which violated the standards by 2.5 ppm, and the high one-hour concentration was 15 ppm, which did not violate the standards. At Harrison Street the observed high 8-hour and 1-hour average concentrations were 7.8 ppm and 13 ppm, respectively, which did not violate the standards. In December 1985, the City monitored CO and counted traffic at the Sixth and Brannan intersection. The preliminary analysis corresponds closely to the baseline data used when CO was modeled for this project. These data from the "hot spot" monitoring programs indicate that locations in

San Francisco near streets with high traffic volumes and congested flows may experience violations of the eight-hour CO standard under adverse meteorological conditions.

Comparison of these data with those from other BAAQMD monitoring stations indicate that San Francisco's air quality is among the least degraded of all the developed portions of the Bay Area. Three of the four prevailing winds, west, northwest, and west-northwest blowing off the Pacific Ocean reduce the potential for San Francisco to receive pollutants from elsewhere in the region.

San Francisco's air quality problems, primarily CO and TSP, are due largely to pollutant emissions from within the City. CO is a non-reactive pollutant and its major source is motor vehicles. CO concentrations are generally highest during periods of peak traffic congestion. Particulate levels are relatively low near the coast, increase with distance inland, and peak in dry, sheltered valleys. The primary sources of particulate in San Francisco are demolition and construction activities, and motor vehicle travel over paved roads.

San Francisco contributes to regional air quality problems, including ozone, which affect other parts of the Bay Area. Ozone is not emitted directly from sources, but is produced in the atmosphere over time and distance through a complex series of photochemical reactions involving hydrocarbon (HC) and nitrogen oxide (NOx) emissions, which are carried downwind as photochemical reaction occurs. Ozone standards are violated most often in the Santa Clara, Livermore, and Diablo Valleys, because local topography and meteorological conditions favor the buildup of ozone and its precursors.

In 1982, motor vehicles were the source of 86% of the CO, 46% of the hydrocarbons (HC), 44% of the TSP, and 56% of the nitrogen oxides (NOx) emitted in San Francisco, while power plant fuel combustion was the largest single source of sulfur oxides (SOx), about 33% of the total.[4] These percentages are expected to apply reasonably well to current conditions.

In response to the Bay Area's ozone and CO nonattainment designations, the Association of Bay Area Governments (ABAG), BAAQMD, and the Metropolitan Transportation

Commission (MTC) prepared and adopted the 1982 Bay Area Air Quality Plan, which establishes pollution control strategies to attain federal ozone and CO standards by 1987 as required by federal law.[5] These strategies were developed on the basis of detailed subregional emission inventories and projections, and mathematical models of pollutant behavior, and consist of stationary and mobile source emission controls and transportation improvements. The BAAQMD, MTC, and California Bureau of Automotive Repair (a state agency) have primary responsibility for implementation of these strategies.

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[1]State standards for particulate matter changed in 1983 and federal standards changed in 1987 to concentrate on fine particulate matter which has been demonstrated to have health implications when inhaled (PM-10). The previous state and federal particulate standards were 100 micrograms per cubic meter (ug/m^3) and 260 ug/m^3 of particulates, respectively. The present state and federal PM-10 standards are 50 ug/m^3 and 150 ug/m^3, respectively, of fine particulate matter. Although both the previous and present particulate standards are measured in ug/m^3, under the PM-10 standards only those particulates 10 microns or less in size are measured. The BAAQMD (Thomas Perardi) has stated that TSP includes about 50% to 60% of particulates of 10 microns or less; thus, the TSP standards are generally equivalent to the PM-10 standards. BAAQMD is presently monitoring PM-10 at seven Bay Area monitoring stations, including the 16th and Arkansas station in San Francisco.

[2]Association of Bay Area Governments, AQMP Tech Memo 33, "Summary of 1979/1980 Hotspot Monitoring Program," Berkeley, California, June 1980.

[3]Association of Bay Area Governments, AQMP Tech Memo 40, "Results of the 1980/1981 Hotspot Monitoring Program for Carbon Monoxide," Berkeley, California, January 1982.

[4]Bay Area Air Quality Management District (BAAQMD), Base Year 1982 Emissions Inventory Summary Report, San Francisco, California, November 1, 1983.

[5]Association of Bay Area Governments (ABAG), BAAQMD and MTC, 1982 Bay Area Air Quality Plan, Berkeley, California, December 1982.

E. WATER QUALITY & MARINE BIOLOGY

SETTING

Existing Water Quality

- During severe storms the bacterial content of nearshore waters rises as a result of combined sewer overflows; the appearance of waters may also be degraded.

Regulation of Water Quality

The government agency with primary responsibility for protecting the health of San Francisco Bay is the Regional Water Quality Control Board, San Francisco, Bay Region. The Board has prepared a water quality control or "basin" plan that serves as a blueprint for water pollution control activities in San Francisco Bay. The basin plan identifies a number of uses of San Francisco Bay that must be protected. These uses, referred to as beneficial uses, are non-contact recreation, wildlife habitat, preservation of rare and endangered species, estuarine habitat, warm freshwater and cold freshwater fish habitat, fish spawning and migration, industrial service supply, navigation and commercial and sport fishing. To protect the beneficial uses the Regional Board establishes water quality objectives and requires dischargers to San Francisco Bay to meet certain effluent limitations which will result in compliance with the objectives.

The current San Francisco Bay Water Quality Control Plan (Basin Plan) amendments adopted in 1987 by the San Francisco Regional Water Quality Control Board (RWQCB) define water quality objectives to protect and enhance defined beneficial uses. The amendments are currently under review by the State Water Resources Control Board (SWRCB) and may be approved or revised by the SWRCB.

The primary impact of the Basin Plan amendments is more stringent water quality requirements and effluent limitations for the discharge of toxic pollutants, particularly heavy metals and cyanide.

Water Quality Objectives

Water quality objectives or standards have been established by the RWQCB for the waters of San Francisco Bay. These objectives describe the level of water quality which should exist to protect and enhance the defined beneficial uses such as fish habitat and recreational use. In establishing relevant objectives, consideration is given to the expected water uses, any adverse effects of not attaining the established objectives, the capability of controlling water quality to permit all expected uses, and the administrative and institutional aspects of water quality control. Water quality resulting from attainment of the established objectives must be sufficiently high to ensure protection for all designated current and potential beneficial uses. The RWQCB recognizes that too little information exists in some cases to establish definitive objectives, but believes its conservative approach to setting objectives is proper. These objectives are achieved primarily through the establishment and enforcement of effluent limitations (waste discharge requirements) through the implementation of the Basin Plan.

In general, the objectives are intended to govern the concentration of pollutant constituents in the main water mass. The same objectives cannot be applied at or immediately adjacent to submerged effluent discharge structures. Zones of initial dilution within which higher concentrations can be tolerated are allowed for such discharges.

Water quality objectives are determined under what is known as an anti-degradation policy. Whenever the existing quality of water is better than the quality of established objective, such existing quality must be maintained unless otherwise provided by State Water Resources Control Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," including any revisions thereto. This is commonly called the Anti-degradation Policy and it applies to all waters of the Basin.

Effluent Limitations

To ensure that water quality objectives are adhered to, the RWQCB establishes effluent limits for all discharges to the waters of region as shown in Table 4, page 62. The effluent limits are included as conditions in discharge permits issued as part of the

● TABLE 4

CONVENTIONAL POLLUTANT EFFLUENT LIMITS
FOR DISCHARGE TO SAN FRANCISCO BAY

Constituent	Limit
Biochemical Oxygen Demand	30[1]
Suspended Solids	30[1]
Coliform Organisms	240[2]
Oil and Grease	10[1]
pH	6-9[3]
Residual Chlorine	0

[1] Monthly average expressed in milligrams per litre (mg/l).

[2] Median value of five samples assuming that the discharge is subject to a minimum of 10:1 dilution in the receiving water.

[3] Monthly average expressed in pH units, the negative logarithm of hydrogen ion concentration.

Source: Regional Water Quality Control Board, San Francisco Bay Region.

National Pollutant Discharge Elimination System (NPDES). Effluent limits for conventional pollutants are shown in Table 4, above. Effluent limits for toxic materials are shown in Table 5, page 63.

Effluent limitations have been established by the RWQCB to achieve the water quality objectives. The RWQCB will consider establishing more stringent limitations or limitations for other constituents as necessary to meet water quality objectives and protect beneficial uses in particularly sensitive areas. Similarly, the RWQCB will consider establishing less stringent limitations, consistent with other State and Federal laws, for any discharge where it can be conclusively demonstrated through a comprehensive program approved by the RWQCB that such limitations will not result in unacceptable adverse impacts on the beneficial uses of the receiving water. Such a comprehensive program must evaluate the impact of other, nearby discharges as well as the discharge itself.

● TABLE 5

SELECTED TOXIC MATERIAL EFFLUENT LIMITATIONS[1]
FOR DISCHARGE TO SAN FRANCISCO BAY μg/1

Constituent	Shallow Water Limiting Concentration	Deep Water Limiting Concentration
Arsenic	20	200
Cadmium	10	30
Total Chromium	11	110
Copper	20	200
Lead	5.6	56
Mercury	1	1
Nickel	7.1	71
Silver	2.3	23
Zinc	58	580
Cyanide	25	25
Phenolic Compounds	500	500

[1] 24-hour average concentrations expressed in micrograms per liter (μg/1).

Source: Water Quality Control Plan, San Francisco Bay Basin Region (2), California Regional Water Quality Control Board, San Francisco Bay Region, December 1986, Table IV-1, p. IV.-3.

F. GEOLOGY/TOPOGRAPHY

The elevation at the project site is +2.4 feet San Francisco Datum (SFD).[2] As indicated on the materials maps of San Francisco Bay, the soil on the bottom of the bay in the vicinity of the project site consists of Upper Bay Mud about 40 feet thick. The thickness of Lower Bay Clay underlying the Upper Bay Mud is about 100 feet. It is, in turn, underlain by bedrock at about -150 feet SFD.[3]

The Upper Bay Mud (also referred to as the Younger Bay Mud) consists of compressible clays, silts and sands of marine and terrestrial origin. The mud is soft and plastic when wet; it shrinks and becomes brittle upon drying. It contains up to 65% water. The solids range between 45% and 95% clay-sized particles, the remainder being silt, fine sand and fragments of shells. The fine sand occurs in lenses and layers that may be several inches to several 10's of feet thick and vary in density from very loose to extremely dense. The top part of the unit is very soft. At greater depths, it becomes semi-consolidated, but it remains soft.[3]

The Lower Bay Clay is a firm silty clay, containing varying amounts of sand and fine gravel. It contains much less moisture than the Upper Bay Mud, having been overconsolidated (squeezed) by the weight of glacial ice and overlying sediments, drying after deposition, chemical reaction and seismic vibration. It is very dense, being considerably less compressible than either the upper or lower member of the Upper Bay Mud and is considered good pile foundation support material for all but heavy, concentrated loads.[3]

The Franciscan Assemblage bedrock consists of clay and silt deposited in a deep sea basin, about 140 million years ago, as submarine mud flows and landslides. The material was consolidated into shales and sandstones, broadly deformed and sheared by ancient faults, folded into chert deposits and intruded by igneous petrothermal materials that cooled into rocks similar to lava flows. The Franciscan rocks beneath the project site probably are sandstone or shale with sandstone interbeds. Both units have high shear strength, high seismic stability and moderately high static stability (resistance to landsliding).[4]

The subsurface materials encountered at the site during the preliminary geotechnical investigations included 25 to 51 feet of Bay Mud overlying and partially interbedded with 10 to 18 feet of Recent Bay Deposits (silty and clayey, fine to coarse sand with shells). Beneath the Bay Mud 57 to 93 feet of interbedded clays and sands were encountered before reaching Franciscan shale at depths between -123 and -164 feet SFD. The clay/sand series represents the Lower Bay Clay interbedded with very densely consolidated coastal and estuary sands. The sand probably does not represent the Colma Formation (encountered in near-shore and on-shore borings in San Francisco), but is likely to be alluvial or estuarine in origin. It is moderately dense near the base of the Bay Mud and very dense near the surface of the Franciscan bedrock.[5]

The project site is in a Special Geologic Study Area as designated in the Community Safety Element of the San Francisco Master Plan.[6] The site would experience violent groundshaking during a great earthquake (Richter Magnitude M 8.0+) along any of the active fault zones surrounding the City.[4] The site is in an area of potential liquefaction, subsidence, differential settlement and lateral spreading.[7]

Foundation support and aquarium drainage also are potential sources of geologic/hydrologic-related problems in the project area. Fault rupture, landsliding and reservoir-related flooding are not hazards in the vicinity of the proposed project.[6]

Potential inundation hazard derives from the 500-year Tsunami event. Tsunamis, or great sea waves, can be generated by any large-scale, short-duration disturbance of the ocean floor.[8] An undersea earthquake greater than M 6.5 which occurs less than 32 miles below the sea floor is capable of causing a tsunami. Earthquakes caused by faults which experience principally horizontal movement, such as the faults offshore of the San Francisco Bay Area, are not considered likely to produce tsunamis. Tsunamis from distant sources usually produce a rapidly rising tide (rather than a great wave) along the coast of California. Consequently, the Bay Area would be in greater danger from local flooding than from the impact force of a great wave.[9] Tsunami inundation data published by the U.S. Army Corps of Engineers indicates projected runups in the area would reach -2.4 feet SFD during the 100-year tsunami and +2.5 feet SFD during the 500-year tsunami.[10,11] The 100-year level is lower than the surface elevation on the project site (+2.4 feet SFD).

Assuming a worst case situation of the tsunami occurring during maximum high tide, the 100-year runup would reach +5.0 feet SFD and the 500-year runup would reach +9.9 feet SFD or about 7.5 feet above the base level at the site.[12]

Subsidence, or the sudden sinking of the ground surface with little or no horizontal motion, can occur during earthquake-induced groundshaking because the vibrations can cause compaction of loose fill. The compaction is not uniform and causes the fill to settle at different rates. Fill was dumped along the north and east tidal flats of San Francisco to provide flatland as early as 1850.[4] Most of this fill was not engineered and is subject to compaction. However, in the vicinity of the landward portion of Pier 39, the fill consists of about 30 feet of fine to medium sand, rock fragments and rock fills that are part of the 1869 seawall and the 1880 seawall and bulkhead. The seawalls are founded on firm sand below a thin layer of Bay Mud.[13] There is no way to predict precisely the future behavior of such material; however, differential settlement is inevitable only when loose fills, used as supporting soils, are subjected to seismic loading. Structures supported on such fill would be damaged or destroyed during the settling process. Fill placed over Bay Mud for use as foundation support also is subject to gradual subsidence caused by readjustment of the mud under heavier surface loads. The sinking that results is not as sudden as earthquake-induced subsidence, but eventually can be just as damaging.[13] The rock fill would not be expected to subside because it has compacted through its own weight, as well as seismic vibration during the 1906 earthquake.

Liquefaction can be induced by groundshaking in loose, water-saturated fine sand. The vibrating action caused by the earthquake turns the soil/water mixture to quicksand. Any structure supported on the soil would tilt or sink. As with subsidence, the process does not occur uniformly and the structure's foundations would be strained, thus damaging or destroying the structure.[7]

Lateral spreading or plastic flow of Bay Mud can be initiated by major earthquakes. Mud waves caused by earthquakes are elastic ripples created on the mud surface, but are not permanent features. Lateral spreading involves a permanent horizontal deformation of the mud that is similar to dough being spread on a breadboard. Any structure supported on the mud would sink as the mud spreads. In worst-case conditions a structure could be overturned by the uneven loss of foundation support (differential settlement).[14]

[1]Copies of the documents cited in these footnotes are on file at the San Francisco Department of City Planning, 450 McAllister Street, San Francisco, California 94102.

[2]San Francisco Datum (SFD) established the City's "0" point for surveying purposes at approximately 8.6 feet above mean sea level (msl). Elevations in this report and the cited documents are given with respect to this datum.

[3]H.B. Goldman, "Geology of San Francisco Bay," in Geologic and Engineering Aspects of San Francisco Bay Fill, California Division of Mines and Geology, Special Report 97, 1969, pages 9 to 30 and plates 1 to 4, scale 1:80,000.

[4]J. Schlocker, Geology of San Francisco North Quadrangle, California, U.S. Geological Survey, Prof. Paper 782, U.S. Government Printing Office, Washington, D.C., 1974, Plates 1 and 3 (scale 1:24,000), and Table 11. Active faults in the Bay Area (shown on Figure 1) are the San Andreas fault, about 7 miles west of the project, the Hayward fault, about 10 miles east of the project, and the Calaveras fault, about 20 miles east of the project.

[5]Well logs provided by Kaldveer Associates, Geoscience Consultants, 20 April 1988, from Project No. K232-6.

[6]City of San Francisco, Department of City Planning, San Francisco Master Plan, Community Safety Element, adopted September 12, 1974, pages 6 through 11.

[7]URS/John A. Blume and Associates, San Francisco Seismic Safety Investigation, San Francisco, California, June 1974, Figures 3, 4, 5, 7, 9 and 10.

[8]Tsunamis: Long-period waves generated by earthquakes, undersea landslides or volcanoes; upon reaching the shallow water of coastal areas, the waves greatly increase in height and may cause localized flooding. Office of Environmental Review, Standard Definitions, San Francisco, California, November 15, 1979.

[9]Diane Pierzinski, Environmental Planner, Department of Conservation, "Tsunamis," California Geology, Sacramento, CA, March 1981, pages 58 and 59.

[10]A 100-year run-up event is one that is equaled or exceeded with an average frequency of once every 100 years; and 500-year runup has a corresponding definition. A. Garcia and J. Houston, Type 16 Flood Insurance Study, U.S. Army Corps of Engineers, Technical Report, H-75-17, Washington, D.C., November 1975, page 4.

[11] A. Garcia and J. Houston, Type 16 Flood Insurance Study, Washington D.C., U.S. Army Corps of Engineers, Technical Report #H-75-17, November 1975, Figure 55. Elevations given in msl datum were converted to SFD for this report.

[12] The maximum high tide level of 7.5 feet above mean lower low water includes a +0.2 foot correction factor for the nearest tidal gauge (at Pier 41). This tide level actually occurred on December 11, 1985. Mean lower low water is about -13 feet SFD. 1985 Tide Tables, San Francisco Edition published by F. S. Elliott Sales Corporation, Tacoma, WA.

[13] City of San Francisco, Department of City Planning, EIR, Proposed North Point Park/Marina, San Francisco California, EE75.368, SCH #76062820, certified August 26, 1976, pages 33 through 40.

[14] C.H. Lee and M. Praszker, "Bay Mud Developments and Related Structural Foundations," Geologic and Engineering Aspects of San Francisco Bay Fill, California Division of Mines and Geology, Special Report 97, 1969, pages 41 to 86.

G. NOISE

The noise environment of the site, like that of downtown San Francisco in general, is dominated by vehicular traffic noise. The nearest residences are approximately 800 feet south of the site on the south side of North Point Street.

IV. ENVIRONMENTAL IMPACTS

INTRODUCTION

An application for an environmental review of the proposed project was filed on December 4, 1986. An Initial Study of the proposed project was published on January 29, 1988 and it was determined that an Environmental Impact Report (EIR) was required. The Initial Study concluded that the following issues required no further study since they would either have insignificant impacts or the impacts would be mitigated to insignificant levels through mitigation measures included in the building design or committed to in the Initial Study: light and glare, population, wind, shadows, operational noise, construction-generated air quality, odors, utilities/public services, endangered species, historical and cultural resources, energy, and hazards. Therefore, this EIR does not discuss the above issues. The Initial Study is incorporated as Appendix A, pages A-3 to A-30 and may be referred to for discussion of these issues.

Not all of the impacts discussed in this section are physical environmental effects as defined by the California Environmental Quality Act (CEQA). They are included for informational purposes only.

A. LAND USE, ZONING AND BAY FILL

1. LAND USE

The existing pier has a footprint of 261,676 square feet (from the seawall) and contains approximately 198,000 square feet of small-scale retail, restaurant and theatre uses. The proposed project would add 19,400 square feet to the footprint of Pier 39 (for a total of 281,076 square feet) and 41,100 net new gross square feet (for a total of 239,100 gross square feet). About eighteen boat slips in the marina of which 16 are leasable would be removed and the lessees of the slips to be removed would be offered the option of either relocating to one of the approximately 50 vacant slips in the Pier 39 marina or transferring their leasehold interest to the Pier 39 Limited Partnership at prevailing market rates. During pile driving and foundation work, there would be a temporary

- displacement of from 12 to 29 additional boat slips to accomodate construction equipment and activities. See Table 1, page 13 and Table 3, page 16.

- The proposed aquarium would contain a total of 49,400 gross square feet (gsf) including lobby and public circulation (2,800 gsf), a book shop (2,200 gsf), office and staff space (3,800 gsf), exhibit areas (6,300 gsf), function room and service area (2,350 gsf), a large tank (9,500 gsf), service area (1,550 gsf), tank service areas (3,800 gsf), and ancillary space (17,100 gsf).

- Approximately 4,100 square feet of the existing building would be removed which currently contains an amusement ride. The net increase of space would be 45,300 square feet. Table 2, page 15, summarizes the proposed project characteristics.

- Within the 51,400 square foot delineated site coverage area as shown in Figures 21A and 21B of the DEIR, the proposed project would result in the net loss of approximately 1,100 square feet of ground level landscaping and 3,600 square feet of ground level pedestrian pavement and in the net addition of 1,800 square feet of ground level covered open space and 600 sqaure feet of ground level roadway which would extend around the entire Pier 39 development. The proposed project would also result in the net addition of approximately 7,000 square feet of second level public promenade with view decks along the northeastern side of the building. Table 6, page 72, summarizes the changes in intensity of open space land adjacent to Pier 39 within the delineated site coverage area. Figures 21A and 21B, pages 73 and 74 show these changes graphically. The perimeter access road/pedestrian walkway would be relocated around the new construction.

The project sponsor proposes to mitigate this impact by improving the resulting open space and other Pier 39 open space. These improvements could include: 1) Installation of six protected pedestrian overlooks, cantilevered over water from the existing and relocated perimeter walk/roadway. These pedestrian overlooks would include benches, viewfinders, special low night lights, and special displays on the content of the important visual landmarks, and other pedestrian amenities, 2) Protecting the pedestrian space from vehicles at the north end of the pier by the installation of bollards, and 3) Expansion of the open deck on the second floor, including a public promenade with view decks running along the northeastern side of the building that would provide new views of the Pier 39 Marina and the Bay.

Land Use Planning Context

The Northern Waterfront has been the subject of much recent study by the Department of City Planning (DCP) and other agencies, and considerable discussion by area business people and residents. This ongoing examination may result in changes to the planning and regulatory context which is described in the Land Use Setting section of this EIR. The DCP has gathered data and developed forecasts of future impacts of land use

● TABLE 6

PROJECTED CHANGES IN SITE COVERAGE RESULTING FROM PROPOSED AQUARIUM
(In Gross Square Feet)

	Existing	Proposed	Net Change
Enclosed Building	4,100	25,400	+21,300
Covered Open Space[1]	2,900	4,700	+1,800
Landscaping	6,700	5,600	-1,100
Pedestrian Pavement	11,000	7,400	-3,600
Roadway	6,200	6,800	+600
Service Area	1,100	1,400	+300
Water	13,700	0	-13,700
Slips	5,700	0	-5,700
TOTAL AREA[2]	51,400	51,400	0

[1]Covered Open Space is defined as those areas open to public access and covered by a roof overhang or upper story building.

[2]This delineated area of 51,400 square feet is arbitrary and was identified for the purposes of tracking changes in open space area around the project site.

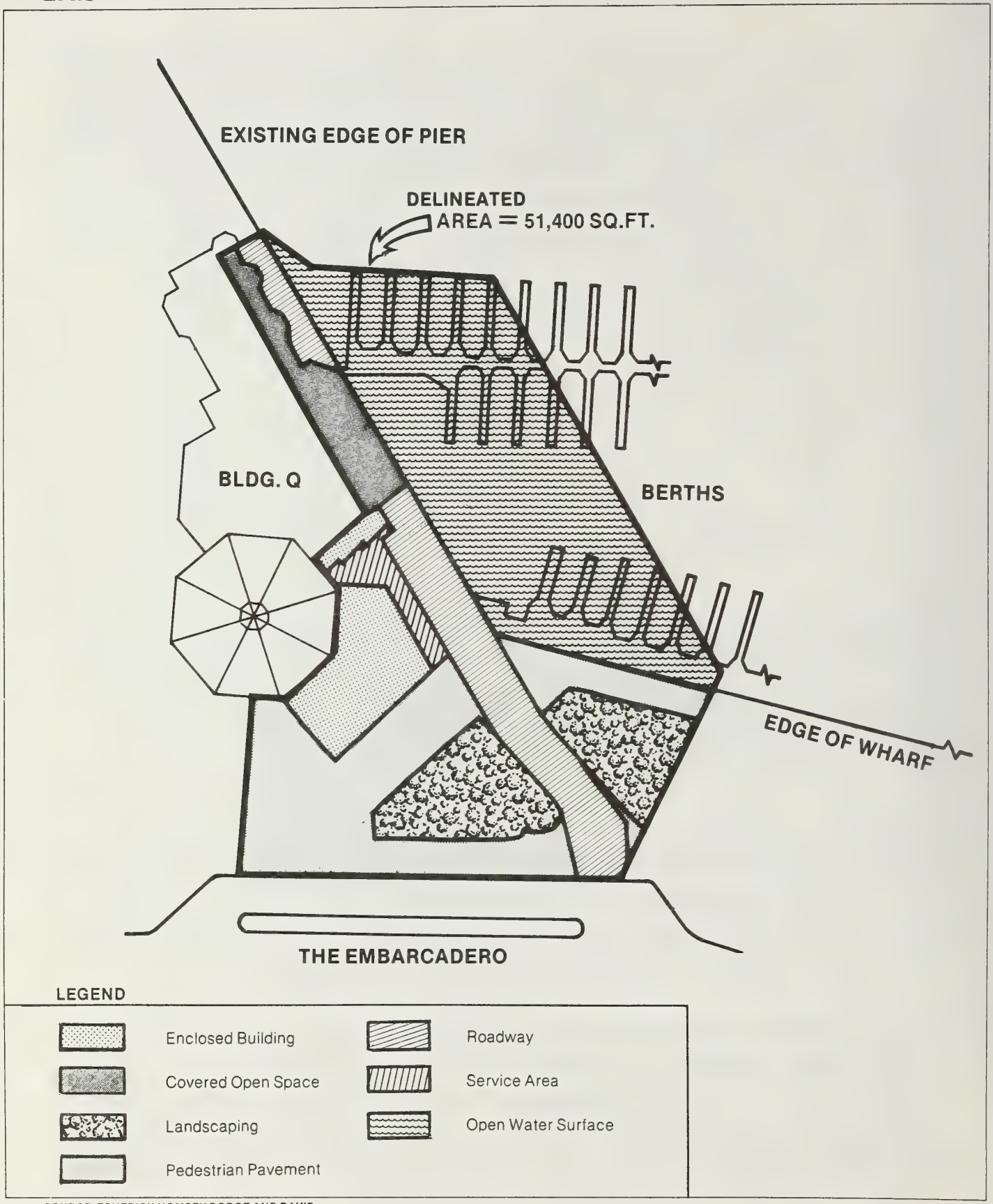
Source: Esherick, Homsey, Dodge and Davis; EIP Associates

developments in the course of its ongoing study of conditions in the area, and in environmental review documents prepared for other proposed projects. This information is used in this EIR (particularly in the transportation setting and impacts sections) in order to assure that the cumulative impacts of potential development are fully addressed, and that the possible directions of land use policy in the area are described.

In March 1987, DCP published The Northern Waterfront Findings Report, which examines the area generally bounded by Van Ness, North Point, Columbus, Francisco, Kearny and the Bay. That report includes a description of existing conditions in the area including population, land use and transportation patterns, as well as consideration of urban design and historic preservation issues. It includes an examination of important issues and

PROPOSED CHANGES IN SITE COVERAGE
EXISTING COVERAGE

FIGURE 21A



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

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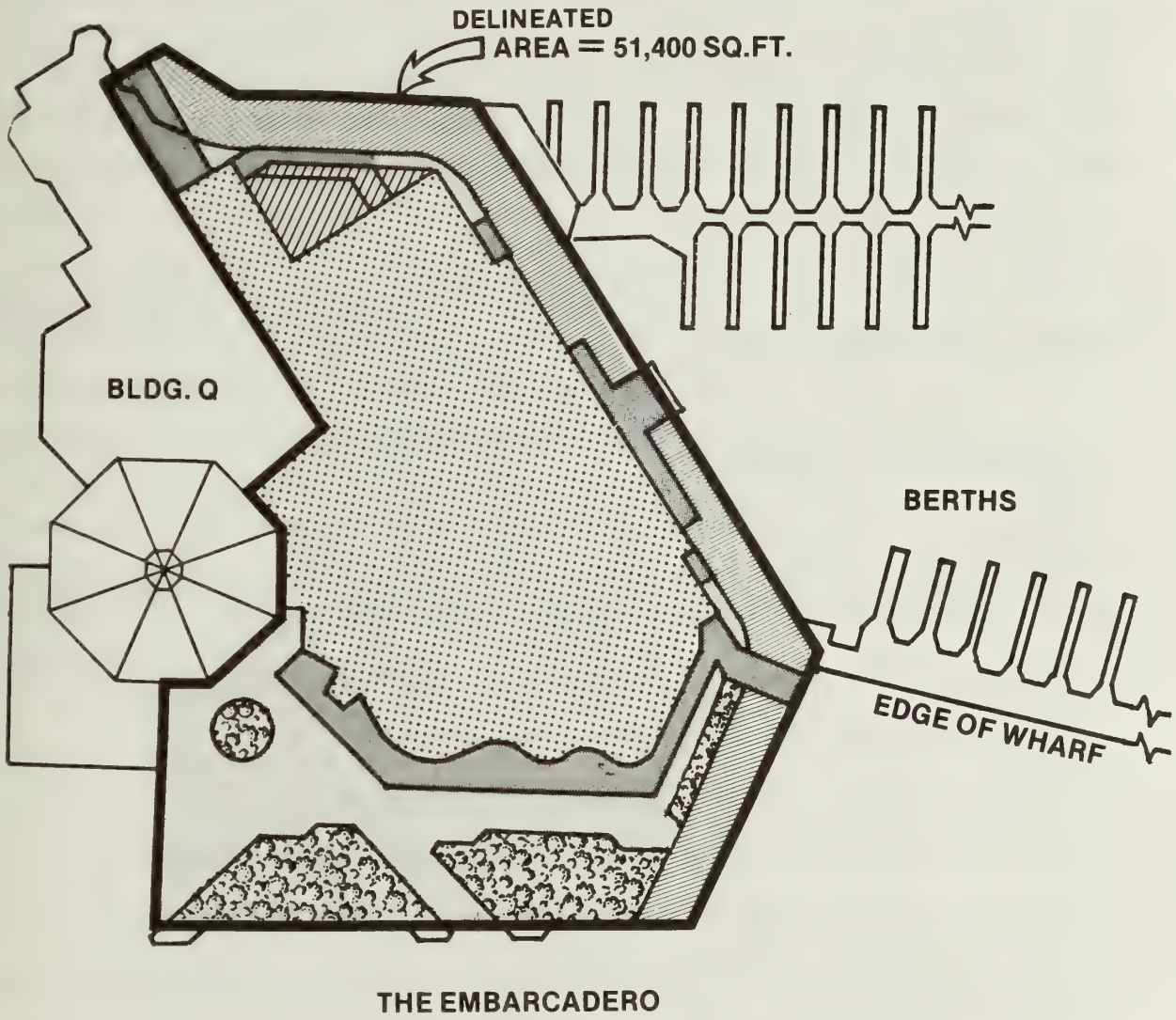
• PROPOSED CHANGES IN SITE COVERAGE PROPOSED PROJECT

FIGURE 21B



LEGEND

- Enclosed Building
- Covered Open Space
- Landscaping
- Pedestrian Pavement
- Roadway
- Service Area
- Open Water Surface

SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

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opportunities and a discussion of strategies which could be taken by public agencies to solve current problems. The report states that "there is a strong perception that the area is losing its attraction because of physical deterioration and lack of an identity and unified image." It further states that the Fisherman's Wharf "fishing fleet urgently needs modern facilities...;" that "a host of transportation problems plague the area;" and that there are economic problems.

- The report assesses a wide variety of land use issues and identifies proposed policies as remedies. The proposals include:

  Support for the development program on Hyde Street Pier and Pier 45 to address the needs of the fishing industry;

  Support for the proposed Fisheries nad Environmental Research Center;

  Reduction of intensity of and assurance of the diversity of new development within the central area of the Northern Waterfront study area;

  Restriction and control of the spread of tourist-commercial uses into new areas;

  Assessment of the need and desire for new hotel rooms;

  Prevent conversion of residential uses to commercial use;

  Increase the attractiveness of the area as a resource for local residents;

  Expand residential development and promote neighborhood character; and

  Encourage neighborhood serving businesses by promoting storefront space in new development projects.

- The report drew on consultants' analyses of transportation (described below) and of the area's hotel market.

In conjunction with The Northern Waterfront Findings Report, a transportation analysis was published which was prepared by a private consultant under the direction of the DCP (DKS Associates, Northern Waterfront Traffic and Transportation Study). This study analyzed the impacts of three possible scenarios of future development in the area, each of which would be possible under current zoning. The scenarios, which were developed by the DCP, included one which emphasized hotel/retail development ("A"), one which emphasized office/retail development ("B") and one which emphasized housing/office development ("C"). The amount of potential future land use change under each scenario

was estimated from an analysis of "soft sites" -- those sites where future development would be most likely to occur in the next 15 to 25 years. The three scenarios are described in more detail in the Northern Waterfront Traffic and Transportation Study. The scenario analysis is not an economic forecast of development over a specific time frame as was contained in the Downtown Plan EIR (EE81.3, certified October 18, 1984), nor is it a list of currently proposed projects. It is not sensitive to short-term changes in existing land use. The scenario analysis methodology was used in the Northern Waterfront Traffic and Transportation Study (and is being used in this EIR) to provide a reasonable context of future development possible under existing zoning, against which the proposed project can be reviewed and evaluated by the public and decision-makers.

The Super 8/Clarion Hotel Environmental Impact Report (85.111E/85.114E, certified October 22, 1987) was prepared for two proposed hotels in the Fisherman's Wharf Area. That EIR considered cumulative transportation impacts, and resulted in some updates on the analysis in the Northern Waterfront Traffic and Transportation Study due to changing conditions.

A Redevelopment "survey area" was designated on the Northern Waterfront in December 1987. The survey area includes the area generally bounded by Van Ness Avenue, North Point Street, Columbus Avenue, Francisco Street, Powell Street, Bay Street, Pier 33 and the U.S. Pier Head Line in the Bay, and includes the project site. Planning work on the Redevelopment survey area is being conducted jointly by the DCP, the Redevelopment Agency and the Port of San Francisco; a Citizens Advisory Committee has been formed to work with the City agencies. This effort is expected to result in the preparation of an area plan and resulting amendments to the San Francisco Master Plan, amendments to the City Planning Code, and the adoption of a Redevelopment Plan. An Environmental Impact Report would be prepared, and approvals would be necessary from the City Planning Commission, the Redevelopment Commission, the Port Commission, the Board of Supervisors and the Mayor.

2. ZONING

The proposed aquarium structure would reach the maximum allowable height of 40 feet. The building would have a length of approximately 160 feet along The Embarcadero and approximately 196 feet along the service road on the east side. The site is within a 40-X Height and Bulk district where there are no bulk requirements unless the average slope of the site is greater than five percent. The average slope for the proposed project is less than five percent.

For retail space, the City Planning Code requires one parking space for each 500 square feet of occupied floor area up to 20,000 where the occupied floor area exceeds 5,000 square feet, plus one for each 250 square feet of occupied floor area in excess of 20,000. For restaurants, the City Planning Code requires one parking space for each 200 square feet of occupied floor area, where the occupied floor area exceeds 5,000 square feet. For theatre space, the Code requires one space for each eight seats.

The Code makes exceptions to this requirement when the project is located in certain districts. Because this proposed project is in the Northern Waterfront Special Use District No. 1, the City Planning Commission may determine an appropriate reduction in the off-street parking requirement as provided by Section 161(f) of the City Planning Code. In deciding the number of parking spaces that would be appropriate for a specific

project the City Planning Commission will consider: anticipated parking demand, accessibility to the proposed site from freeway ramps and major thoroughfares, minimization of possible conflicts between vehicular traffic and pedestrians, service patterns (other than automobiles), the pattern of land use and parking availability in the area, policies in the Plan for the Northern Waterfront, and other criteria considered applicable.

The project would not include the construction of new parking spaces. Daily parking would be available for visitors at the Pier 39 garage. Signage directing parking traffic from queueing lines along the Embarcadero would be added, directing cars to the AMPCO garage at 80 Francisco, which would provide 400 stalls to be open to the public on weekends. The adequacy of parking facilities included in this project will be considered by the City Planning Commission when it considers the proposed amendment of Pier 39's Conditional Use authorization, and is discussed in the Transportation Impacts section of this EIR.

3. BAY FILL

The proposed aquarium would result in new Bay fill as defined by BCDC. It would involve the construction of an approximately 19,900 square foot extension of the existing pier deck into the area currently occupied by the marina. About 11,800 square feet of this space would be covered by the proposed aquarium building. About 8,100 square feet would be a perimeter access road and pedestrian walkway. About 18 boat slips would be removed. The new pier area would be supported by approximately 114 new piles. This Bay fill could result in Water Quality/Biology impacts (see Water Quality/Biology impacts section of this EIR). Any new Bay fill must be considered by the Bay Conservation and Development Commission, using standards contained in the San Francisco Bay Plan and the San Francisco Waterfront Special Area Plan No. 1 (see the Land Use and Zoning Setting section of this EIR). BCDC may require mitigation of this impact pursuant to its responsibilities under the McAteer-Petris Act.

B. URBAN DESIGN AND VISUAL QUALITY

The proposed project would result in the removal of a structure attached to the southeast portion of the octagonal building at the entry to Pier 39, and the construction of building spaces housing the aquarium, ticketing lobby, offices, foyer and other interior spaces necessary to operate the facility (see Section II, page 10, Project Description). The existing platform and walkway above the water on the east side of the octagon building would also be enlarged to accommodate the project and pedestrian and vehicle passageways.

The building would have two stories and would rise to 40 feet above the street. An elevator penthouse tower, located near the southeast corner of the building, would rise to a height of 50 feet above the street, 10 feet higher than the rest of the building. The building would be similar in height to other buildings in the Pier 39 complex. The building would have a maximum length of approximately 160 feet along The Embarcadero and approximately 230 feet along the service road in the marina.

The design includes numerous setbacks and sloped roofs. On the eastern side is a continuous pedestrian and vehicular roadway. Building material would include glass block, wood siding, sloped dark colored painted metal roofs and board form concrete. Other structures on Pier 39 are wood. There is an extensive use of windows on the first floor south elevation (facing The Embarcadero) and second floor of the east elevation (facing the Marina).

The proposed project could be seen from Telegraph Hill and would be most noticeable from vantage points along The Embarcadero to the southeast. The additional construction would not be seen from the pedestrian corridor of Pier 39 as it would be blocked by existing structures. Refer to Figures 22 to 28, pages 79 to 85, for photomontage views from various perspectives.

The proposed structure would be visible from the pedestrian overpass leading to the Pier 39 Garage (Figure 22, page 79). The structure would appear to be similar in height and of similar bulk as the adjacent octagonal building. The structure would obstruct views to boats in the marina and the Bay by extending the mass of the Pier 39 complex along The Embarcadero. The views of boats currently enhance the maritime setting.

PHOTOMONTAGE: VIEW LOOKING NORTHEAST FROM BRIDGE TO PIER 39 GARAGE

FIGURE 22

SOURCE: SQUARE ONE VIDEO

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PHOTOMONTAGE: VIEW LOOKING NORTHWEST ALONG THE EMBARCADERO WALKWAY

FIGURE 23

SOURCE: SQUARE ONE VIDEO

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PHOTOMONTAGE: VIEW LOOKING NORTHWEST ALONG THE WATERFRONT PROMENADE

FIGURE 24

SOURCE: SQUARE ONE VIDEO

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PHOTOMONTAGE: VIEW LOOKING NORTHEAST ALONG BEACH STREET

FIGURE 25

SOURCE: SQUARE ONE VIDEO

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PHOTOMONTAGE: VIEW LOOKING NORTH WHERE BEACH STREET MEETS THE EMBARCADERO

FIGURE 26

SOURCE: SQUARE ONE VIDEO

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PHOTOMONTAGE: VIEW LOOKING NORTHWEST AT GRANT AVENUE AND THE EMBARCADERO

FIGURE 27

SOURCE: SQUARE ONE VIDEO

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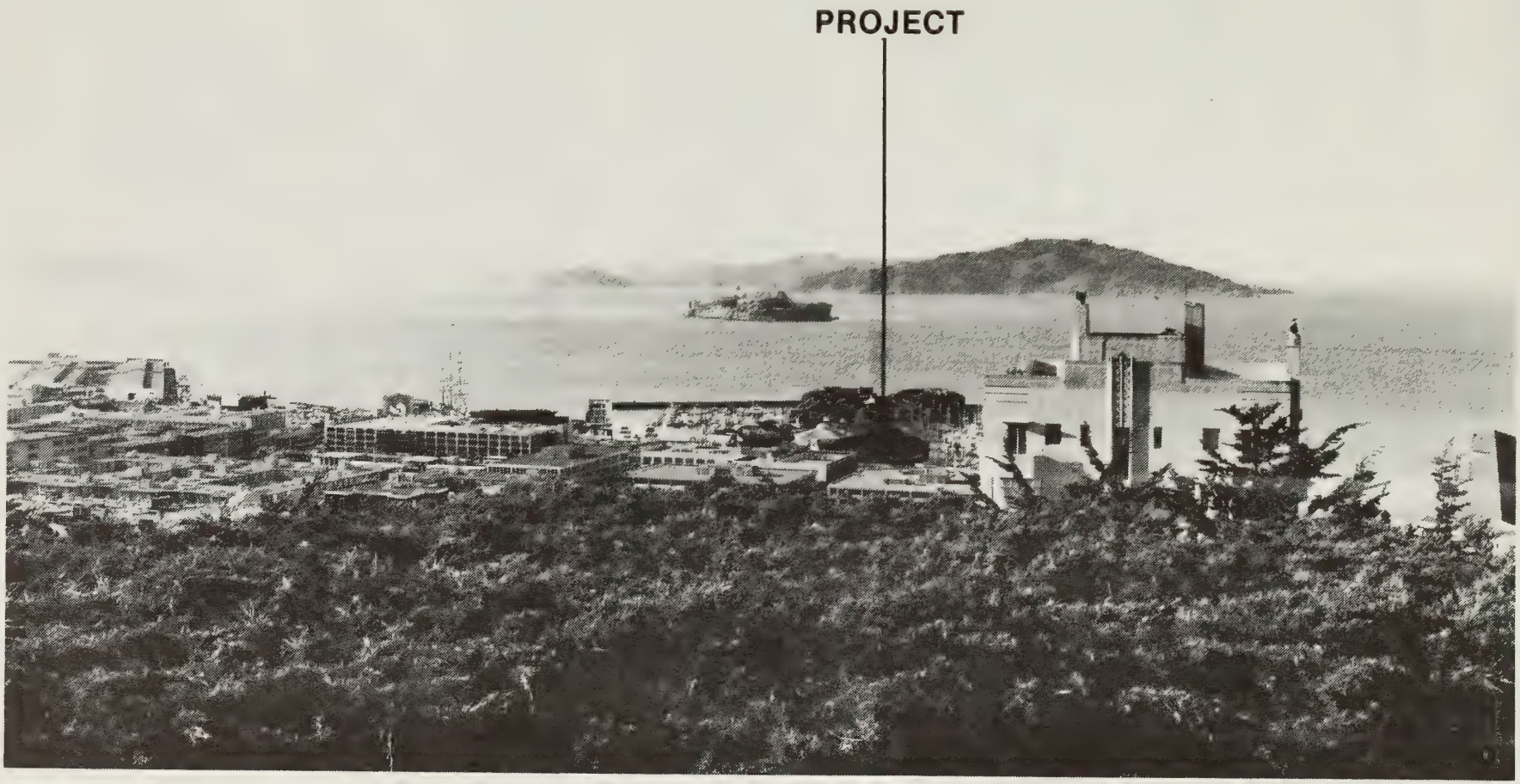
PHOTOMONTAGE: VIEW FROM TELEGRAPH HILL

FIGURE 28



SOURCE: SQUARE ONE VIDEO

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From the east, the project, when viewed from The Embarcadero walkway, would block views to other buildings on the east side of Pier 39 (Figures 23 and 24, pages 80 and 81). Portions of the project would be screened from view by the trees and shrubs along The Embarcadero walkway.

The south portion of the proposed project, the main pedestrian entry, would be visible by pedestrians and motorists on The Embarcadero and Beach Street (Figure 25, page 82). Depending on observer location, the project would block views to boats, boat masts and rigging in the adjacent marina. The overall size and extent of the project would become more evident when viewed from directly south of the project, at the intersection of Beach Street and The Embarcadero (Figure 26, page 83). The various structural components of the project would continue to block views to boats in the marina. There would be greater building frontage along The Embarcadero, with an increasing sense of building enclosure, obstructing public views to the Bay north of Pier 39.

The full extent of the project would be discernable from locations southeast of the project (Figure 27, page 84), near the intersection of Grant Avenue and The Embarcadero, where shrubs and trees of the Northern Waterfront Park would not obstruct views to the project. The project would obstruct public views to the marina and Bay and portions of Angel Island north of Pier 39.

The project would also be viewed from Telegraph Hill (Figure 28, page 85), but would not obstruct views of the Bay from the Hill. Generally, the project would be seen to blend in with the overall complex of structures comprising Pier 39 when viewed from Telegraph Hill.

C. TRANSPORTATION

INTRODUCTION

The following analysis of project impacts is based on the "Underwater World at Pier 39 - Traffic and Transportation Study" (1988) prepared for the City and County of San Francisco by DKS Associates, and is available in the project file at the Department of City Planning, 450 McAllister. Project attendance and trip generation estimates were developed as part of this study following research of attendance trends in the Northern Waterfront and of potential markets and attendance at similar aquariums located at Marine World/Africa USA (Vallejo), Monterey Bay Aquarium (Monterey), Kelly Tarlton's Underwater World (Auckland, New Zealand), Marine Land (Los Angeles), Sea World (San Diego), Sea World (Orlando), Sea World (Ohio), Vancouver Aquarium (Vancouver, B.C.) and Sea Life Park (Honolulu).

Attendance trends at these sites indicated that high-attraction marine aquariums usually generate their highest attendance during the first year of operation due to their unique and unusual entertainment features. Following the peak initial year, attendance slowly drops off, stabilizing after three to five years. For this reason, project impacts were assessed both for the initial year of peak attendance and for a horizon year 15-20 years later, when attendance demand would be stabilized at a lower level, with the proportion of attendance from San Francisco and Bay Area residents declining in comparison to the proportion of attendance from tourists to San Francisco. Both the initial year and horizon year analysis indicated that attendance demand would be in excess of the facility's capacity, which would be a maximum of 900 hourly visitors. Therefore, all transportation analysis is based on this maximum hourly capacity of 900 visitors. In the cumulative section of the EIR "horizon year," "cumulative year," and "long-range year" all refer to this future analysis period 15-20 years from the present.

The analysis presented in this document draws on a number of previous studies carried out in the Northern Waterfront.[1] Traffic counts taken during the spring of 1986 and summer of 1987 were used as the basis for analysis. Counts at the study area intersections on Bay, North Point and Kearny Streets were taken in July and August, 1987 during the peak summer tourist season. The other four intersections were counted in March 1986, when

many local schools and colleges were on spring vacation. Summer 1987 counts taken throughout the Northern Waterfront for the traffic analysis of the Super 8 and Clarion Hotels indicate that in general weekday traffic flows are slightly higher during peak summer periods as compared to peak spring periods.[2] These differences are most noticeable along the periphery of the Northern Waterfront (Bay Street, The Embarcadero, and North Point Street), where summer counts are used in this study. Intersections closer to the waterfront showed no appreciable difference between peak spring and summer conditions on weekends or weekdays.

Analysis of cumulative traffic impacts in the project vicinity was done at two levels. The first was intended primarily to assess the impact of the project on cumulative traffic flows. The second, which included the proposed project, focused on analysis of the potential configurations for a second Pier 39 garage access. Two potential alignments of the planned MUNI F-Market line were included in the analysis of garage access options, the first a double-track alignment along The Embarcadero. The F-line would help relieve the excess cable car demand and would provide accessibility to remote parking areas for visitors to the Northern Waterfront.

SITE SPECIFIC IMPACTS

Trip Generation

All site specific impacts are based on a maximum design capacity of 900 hourly visitors, which is based on the physical capacity of the aquarium facilities.[3] Without admission controls (timed tickets or other forms of constraining the total demand to match the maximum capacity of the facility), attendance could be as high as 12,500 weekday visitors and 28,000 visitors on peak weekend days in the initial year or 10,100 peak weekday and 23,000 peak weekend visitors in the horizon year.[4] The projected attendance demand could exceed capacity on weekends during the initial year and in future years after attendance stabilizes. Undesirable transportation impacts would occur without time-specific admission tickets or a similar method of admission control to limit the maximum hourly attendance to 900 visitors. Controls on admissions could be eased or eliminated if in future years daily attendance falls below the maximum design capacity of the facility.

With attendance limited to the maximum hourly design capacity of 900 visitors, the proposed Underwater World would generate approximately 2,720 person trips (two-way) during the weekend PM peak hour in both the initial year and future years (see Table 7, page 90). During the weekday PM peak hour, the project would generate an estimated 2,350 two-way person trips in the initial year, and 1,900 person trips in future years. Analysis of tourism trends in the Northern Waterfront[5] indicated that approximately 31% of the initial year attendance would be new trips (840 trips on weekends and 730 trips on weekdays). In the long-range analysis year, the proportion of local trips would decrease relative to tourist trips, such that about 29% of project trips would be new trips made specifically to Underwater World (790 weekend trips and 550 weekday trips).

Traffic impacts of the proposed project were evaluated for the PM peak hours of activity on the surrounding street system, when the highest traffic levels of the day are experienced.[6] The project itself would generally generate its peak traffic during the street system afternoon peak period.

Trip Distribution and Mode Split

Private automobiles and public transit would represent the dominant modes of transportation to the project vicinity.[7]

In the initial year, the demand for cable car trips (approximately 18% of project visitor trips) would not be met, as the cable cars currently operate at capacity. Thus, to measure the greatest impact on traffic for the initial year of operation, the cable car demand was redistributed among the remaining transportation modes. By the horizon year, the planned extension of the historic MUNI F-Market line into the Northern Waterfront is assumed to be in operation, and would provide a tourist-oriented transit alternative similar to cable cars. Therefore, the horizon year mode split assigns cable car trips to the F-Market line and the remaining modes are reduced proportionately. The MUNI F-Market line would not have noticeable effects on traffic flow or intersection capacity at intersections, except at Embarcadero/North Point in the case of a single-track configuration. However, it would affect the potential lane configurations in the vicinity of the Pier 39 garage with the addition of a second garage access. Therefore, the F-line

TABLE 7

PROJECT PERSON TRIP GENERATION[1]

	Daily Trips	PM Peak Period[2]		PM Peak Hour[3]	
	(Two Way)	In/Out[4]	Total	In/Out	Total
Initial Weekend[4]					
Net New[5]	7,810	760/760	1,520	420/420	840
Linked[6]	17,390	1,690/1,690	3,380	940/940	1,880
Total	25,200	2,450/2,450	4,900	1,360/1,360	2,720
Initial Weekday					
Net New	7,750	430/880	1,310	240/490	730
Linked	17,250	950/1,960	2,910	530/1,090	1,620
Total	25,000	1,380/2,840	4,220	770/1,580	2,350
Future Weekend					
Net New	7,310	710/710	1,420	395/395	790
Linked	17,890	1,740/1,740	3,480	965/965	1,930
Total	25,200	2,450/2,450	4,900	1,360/1,360	2,720
Future Weekday					
Net New	5,860	320/670	990	180/370	550
Linked	14,340	810/1,620	2,430	450/900	1,350
Total	20,200	1,130/2,290	3,420	630/1,270	1,900

[1] Limited by maximum design capacity of 900 hourly visitors, based on a 14-hour operation (10:00 AM to midnight).

[2] 4:00 – 6:00 PM on weekdays, 3:00 – 5:00 PM on weekends.

[3] 5:00 - 6:00 PM on weekdays, 3:00 - 4:00 PM on weekends.

[4] City and County of San Francisco, Underwater World at Pier 39: Traffic and Transportation Study, (1988), by DKS Associates.

[5] New trips to Fisherman's Wharf area specifically to see Underwater World.

[6] Trips to Underwater World which would be made to the Northern Waterfront whether or not the project existed.

Source: DKS Associates.

was analyzed in the comparison of garage alternatives based on cumulative traffic, but not in the initial cumulative traffic analysis, which incorporates the existing street system.

In the initial year, about 63% of project visitors would use a private vehicle, 14% would walk or ride a bike, 15% would use public transportation, 3% would use taxis or limousines, and the remaining 5% would use tour buses or vans.

The F-Line would accommodate the project's demand for cable car trips by the long-range horizon year. In the long-range year private vehicle use would decrease to about 52% of project visitor trips. Public transit would handle approximately 30% of project visitors, while 2% would use taxis or limousines, 4% would use tour buses or vans, and 12% would arrive on foot or by bicycle.

The initial and horizon year mode split information for the proposed Underwater World is summarized in Table 8, page 92.

Traffic

Existing Traffic. Existing Levels of service (LOS) and volume-to-capacity ratios (V/C ratios) were computed for eight Northern Waterfront intersections in the weekday and weekend PM peak hours.[8] The intersections include Embarcadero/Bay, Embarcadero/North Point, Embarcadero/Beach, Embarcadero/Powell/Jefferson, Powell/Beach, Stockton/Beach, Kearny/Bay, and Kearny/Francisco. All study area intersections operate at LOS "A," "B," or "C" during the weekday PM peak hour (5:00 PM -6:00 PM).

On weekends, three intersections operate at LOS "D" or worse during the PM peak hour (3:00 - 4:00 PM): Powell/Beach (LOS "E"), Powell/Jefferson/The Embarcadero (LOS "E"), and Embarcadero/Beach. At Embarcadero/Beach, the small volume of left turn traffic from eastbound Beach onto The Embarcadero operates at LOS "F," while the remaining intersection approaches operate at LOS "A."

TABLE 8

NET NEW PROJECT PERSON TRIPS BY MODE

Modes	Percent[1]	Weekday PM Peak Hour Out	Weekday PM Peak Hour Total	Weekday PM Peak Period Out	Weekday PM Peak Period Total	Weekend Afternoon Peak Hour Out	Weekend Afternoon Peak Hour Total	Weekend Afternoon Peak Period Out	Weekend Afternoon Peak Period Total
Initial Year[2]									
Auto Driver	20%	50/100	150	90/180	270	85/85	170	152/153	305
Auto Passenger	42%	100/205	305	180/370	550	175/175	350	315/315	630
Motorcycle	1%	2/3	5	3/7	10	5/5	10	10/10	20
Taxi/Limousine	3%	7/13	20	10/25	35	12/13	25	23/22	45
MUNI Bus	11%	25/55	80	50/95	145	48/47	95	85/85	170
Cable Car	0%	0/0	0	0/0	0	0/0	0	0/0	0
Other Transit	4%	10/20	30	20/35	55	17/18	35	32/33	65
Tour Bus/Van	5%	15/25	40	25/45	70	20/20	40	35/35	70
Walk	13%	30/65	95	55/115	170	55/55	110	100/100	200
Bicycle	1%	2/3	5	3/7	10	3/2	5	5/5	10
Total	100%	241/489	730	436/879	1,315	420/420	840	757/758	1,515
Horizon Year									
Auto Driver	16%	30/60	90	50/110	160	65/65	130	117/118	235
Auto Passenger	35%	60/130	190	110/230	340	137/138	275	248/247	495
Motorcycle	1%	2/3	5	3/7	10	5/5	10	10/10	20
Taxi/Limousine	2%	3/7	10	5/15	20	8/7	15	12/13	25
MUNI Bus	9%	15/35	50	30/60	90	35/35	70	63/62	125
F-Line	18%	35/65	100	60/120	180	70/70	140	125/125	250
Other Transit	3%	5/15	20	10/25	35	12/13	25	22/23	45
Tour Bus/Van	4%	5/15	20	10/25	35	15/15	30	28/27	55
Walk	11%	20/40	60	35/75	110	45/45	90	80/80	160
Bicycle	1%	2/3	5	3/7	10	3/2	5	5/5	10
Total	100%	177/373	550	316/674	990	395/395	790	710/710	1,420

[1] Assumes cable cars handle no project trips in initial year. In horizon year, F-Market line is assumed to accommodate cable car demand.

[2] Based on retail customer surveys in the "Northern Waterfront Traffic and Transportation Study – Final Consultant's Report," City and County of San Francisco, Department of City Planning, by DKS Associates, March 1987, pages A-14 to A-27. Tour bus/van percent increased for aquarium compared to retail based on Monterey Bay Aquarium mode split data.

Source: DKS Associates.

There is localized congestion along Beach Street and The Embarcadero on weekends during the tourist season. Congestion on The Embarcadero results from long queues of vehicles waiting to enter the Pier 39 garage, heavy pedestrian traffic at the Powell/Jefferson/Embarcadero intersection, and the unusual geometries of this intersection. Heavy traffic leaving the Western Wharf area trying to reach The Embarcadero is the primary cause of weekend afternoon congestion along Beach Street. This heavy traffic flow causes substantial delays at the Powell/Beach intersection. The capacity of Beach Street is significantly reduced by the storage of MUNI buses on the southern curb of the street between Powell and Stockton Streets.

Figure 29, page 109, shows existing weekday intersection performance and Figure 30, page 110, shows existing weekend intersection performance.

Local Traffic Impacts. On weekends in the initial year, the proposed Underwater World would generate about 1,560 net new daily vehicle trips (both directions) and about 1,550 new vehicle trips on weekdays. During the initial year weekday PM peak period, about 300 new vehicle trips would be generated by the proposed project, including approximately 150 which would occur in the PM peak hour. On weekends during the initial year, the proposed project would expect to generate about 320 net new vehicle trips during the PM peak period, with about 170 occurring during the PM peak hour.

Based on the analysis of attendance demand, weekend project attendance demand in the horizon year would also exceed capacity, and therefore would need to be limited to the maximum hourly capacity of 900 visitors. The horizon year analysis assumes that the number of vehicle trips would be less, however, due to fewer new trips made by the resident population, a higher proportion of diverted visitor trips, and the operation of the planned MUNI F-Line extension, which would accommodate the project's cable car demand. In the long-range year, the project would generate approximately 940 daily net new vehicle trips on weekdays (both directions), with about 160 occurring during the PM peak period, and 90 during the PM peak hour. On weekends in the horizon year, the project would generate an estimated 1,170 net new vehicle trips. Approximately 235 new vehicle trips would be expected during the weekend PM peak period, with about 130 during the PM peak hour. Projected net new vehicle trips generated by the proposed project are summarized in Table 9, page 94.

● TABLE 9

PROJECT VEHICLE-TRIP GENERATION (NEW PRIVATE AUTO TRIPS)[1]

	Daily Vehicle Trips	PM Peak Period[2]		PM Peak Hour[3]	
		In/Out	Total	In/Out	Total
Initial Year[4]					
Weekday	1,550	90/180	270	50/100	150
Weekend	1,560	150/150	300	85/85	170
Horizon Year[5]					
Weekday	940	55/110	165	30/60	90
Weekend	1,170	115/115	130	65/65	130

[1] Net new vehicle trips only, i.e., those attracted to the Northern Waterfront specifically to visit the proposed project. Based on maximum hourly capacity of 900 visitors over a 14-hour day.

[2] 4:00 - 6:00 PM on weekdays, 3:00 - 5:00 PM on weekends.

[3] 5:00 - 6:00 PM on weekdays, 3:00 - 4:00 PM on weekends.

[4] Assumes no net new trips can be accommodated by cable cars. Cable car demand distributed among remaining travel modes.

[5] Assumes MUNI F Line is operational and accommodates cable car demand.

Source: DKS Associates.

- Traffic conditions were studied under a scenario where project traffic (including private autos, motorcycles, taxis, limousines, tour buses, tour vans) was added to existing traffic. Of the eight study area intersections, six would experience no change in volume-to-capacity ratios (V/C ratios) or levels of service (LOS). Project traffic would generate a decrease in the level of service from LOS "C" to LOS "D" at the Powell/Beach intersection during the week, and a change from LOS "A" to LOS "B" at Kearny/Bay on weekends, when project traffic would use remote parking accessible via Kearny Street. Increases of approximately one percent would occur at Embarcadero/North Point and Embarcadero/Bay on weekdays and weekends. These increases would fall within the range of normal day-to-day fluctuations in PM peak hour traffic.

Table 10, page 96, summarizes weekday and weekend PM peak hour levels of service and V/C ratios for existing traffic, existing plus project traffic, and traffic from cumulative development, which includes the project.

Regional Traffic Impacts

The proposed Underwater World project would generate about 50 new PM peak-hour and about 85 new PM peak-period outbound regional vehicle-trips on weekdays in the initial year. In the long-range year, the project would generate approximately 40 PM peak hour and 70 PM peak period outbound regional vehicle trips on weekdays. Approximately 60% of the project's peak period regional trips (50 trips in the initial year) would be to the East Bay via the Bay Bridge. U.S.-101 and Interstate 280 together would handle about 30% of the regional trips (about 30 during the PM peak period), while the remaining 10% (10 trips) would use the Golden Gate Bridge to the North Bay. The project travel demand would represent less than 0.5% (one-half of one percent) of the total weekday PM peak period outbound regional auto demand in the year 2000.

Transit

Based on the mode splits developed for the Northern Waterfront Study and summarized in Table 8, page 92, about 15% of all project trips (both new trips and linked trips) would be on public transit on weekdays and on weekends in the project's initial year. By the horizon year, the assumed operation of the MUNI F-Line would increase the transit share of project trips to about 30% by accommodating the demand for cable cars, which would not be met in the project's initial year.

TABLE 10

EXISTING AND PROJECTED INTERSECTION PERFORMANCE

Intersection	Existing[1] V/C	Existing[1] LOS	Existing + Project V/C	Existing + Project LOS	Cumulative Development With Project (No Mitigation) V/C	Cumulative Development With Project (No Mitigation) LOS
Weekday PM Peak Hour[2]						
Signalized						
Embarcadero/Jefferson/Powell	0.72	(C)	0.72	(C)	0.98	(E)
Embarcadero/North Point[4]	0.75	(C)	0.76	(C)	0.77	(C)
Embarcadero/Bay	0.76	(C)	0.77	(C)	0.90	(E)
Kearny/Bay	0.74	(C)	0.74	(C)	0.79	(C)
Unsignalized[5]						
Powell/Beach	C		D		E	
Stockton/Beach	A/A		A/A		A/B	
Embarcadero/Beach	A/C		A/C		A/E	
Kearny/Francisco	A/A		A/A		A/A	
Weekend PM Peak Hour[3]						
Signalized						
Embarcadero/Jefferson/Powell	0.93	(E)	0.93	(E)	1.07	(F)
Embarcadero/North Point[4]	0.78	(C)	0.79	(C)	0.83	(D)
Embarcadero/Bay	0.74	(C)	0.77	(C)	0.90	(E)
Kearny/Bay	0.56	(A)	0.60	(B)	0.63	(B)
Unsignalized[4]						
Powell/Beach	E		E		F	
Stockton/Beach	A/C		A/C		A/E	
Embarcadero/Beach	A/F		A/F		B/F	
Kearny/Francisco	A/A		A/A		A/A	

[1] Counts conducted by DKS Associates, 1986 and 1987.

[2] 5:00 - 6:00 PM.

[3] Assumes signalization, which is warranted with existing traffic.

[4] Shows levels of service for major approach/minor approach except at Powell/Beach, which is a 3-way stop.

[5] 3:00 - 4:00 PM.

Source: DKS Associates.

Existing transit ridership information indicates that with the exception of the cable cars, transit service within the Wharf is generally underutilized. However, several of the MUNI routes which have excess capacity near their terminals in the vicinity of the project site operate at or near capacity at other points along their routes. Weekday PM peak period load factors for the eight MUNI lines serving the Wharf average approximately 0.39 passengers per seat. The cable cars on the other hand are very full with a load factor of about 1.77 passengers per seat in the PM peak period.

This analysis assumes that the initial year cable car demand generated by the project would not be met due to waiting times for cable cars which would be unacceptable to project patrons. The additional ridership from the project on the cable car system would result in delay increases of about 10 minutes over the existing 50 to 65 minute wait on weekends. As a result, the cable car demand was distributed among the other transportation alternatives.

The project would generate an estimated 160 bus trips on weekdays and 180 trips on weekends aboard the MUNI bus system during the initial year of project operation and 100 weekday MUNI bus trips and 130 weekend MUNI bus trips for the horizon year of the project, but these bus riders would be dispersed among several lines during the peak period. Of the total peak period transit trips, employees of the proposed project may represent one or two trips on Golden Gate Transit, AC Transit, SamTrans, and BART, not enough to have a measurable impact. In the initial year, a few project visitors would also use these regional transit carriers, but would not have a measurable impact. The projected new peak period and peak hour transit trips that would be generated by the proposed project are summarized in Table 6, page 72, above.

Parking

The proposed Underwater World would supply no on-site parking spaces for project visitors or employees. Department of City Planning Staff has identified the proposed project as a retail use for purposes of calculating required off-street parking.[9] The proposed project's required parking would be evaluated as part of Pier 39. Currently, as estimated by the San Francisco Planning Code, the parking requirement for Pier 39 is 857 spaces. The

proposed project would increase the parking requirement by 74 spaces, for a total of 931.[10] The Pier 39 garage has 937 striped stalls.

The project's weekend and weekday off-street parking demand was computed for both a maximum demand scenario, which assumes that the project would operate at capacity throughout the day, and at normal operating conditions, which assumes that the project's attendance pattern would be similar to the Underwater World in Auckland, New Zealand (see Table 11, page 99). The analysis of potential attendance developed in the background traffic study for the project indicated that the project could operate at capacity on weekends in the initial year and future years. (See Appendix B for parking demand calculations.) The greatest parking demand would occur on weekends of the initial year, when the project would require an estimated 180 (moderate demand) to 330 spaces (maximum demand). The initial year weekday demand would range from 160 spaces to a peak of 290 spaces. In the year 2005, the project would generate a weekend demand of 135 to 245 spaces, and a weekday demand of 120 to 175 spaces.

The project sponsor has reached an agreement with AMPCO parking, which operates the 80 Francisco parking garage, to open the garage on weekends. This would add 400 spaces to the weekend parking supply in the Northern Waterfront, which would exceed the project's peak weekend parking demand. In addition, the project sponsor is planning modifications to the Pier 39 garage, which will increase the parking supply in the garage by 40 spaces (18 spaces through restriping for compact stalls, and 22 spaces through reconfiguring the stall layout). The project sponsor is also considering expanding valet operations in the Pier 39 garage to make use of valet parking on every floor. By instituting a moderate level of valet parking on every floor, it would be possible to increase the number of valet spaces to 220-250 spaces, an increase of 50 to 80 spaces over the current peak level of valet activity. This would require at least one garage attendant per floor to ensure that valet operations would not create excessive processing delays.

During the week, the project would create a maximum parking demand of approximately 290 stalls. Recent surveys by DKS indicate that public off-street parking is less than 70 percent occupied during summer weekday afternoons[11] (see Appendix B for survey details) which would leave ample parking available to accommodate weekday project visitors. The

TABLE 11

PROJECT PARKING DEMAND

	Weekday Demand		Weekend Demand	
	Maximum[1]	Moderate[2]	Maximum	Moderate
Initial Year	290	160	330	180
2005	175	120	245	135

[1]Maximum demand based on capacity operation (900 people/hour) over a 14-hour day.

[2]Moderate demand based on the Auckland, New Zealand Underwater World attendance profile.

Source: DKS Associates.

Pier 39 garage was observed to have over 100 of the 937 striped spaces available during the week. Combined with a moderate level of valet parking during the week and the proposed striping and layout improvements, the Pier 39 garage alone would be able to satisfy the project's maximum weekday demand. On weekends during the tourist season, the Pier 39 garage is completely occupied throughout the day, with the inside northbound lane on The Embarcadero serving as a queue lane for visitors waiting to enter the garage.

Off-Street Loading

The Underwater World project would have a requirement under Section 152 of the City Planning Code for one off-street loading space. The proposed project would provide a freight loading area on the expansion of Pier 39 to the east of the existing pier, which would be accessible from a proposed service vehicle access road leading around the east side of the project from The Embarcadero. The project would generate about 5 to 10 daily truck trips, of which most would be made by smaller delivery vehicles.

Pedestrians

The Underwater World Project site fronts along The Embarcadero, across from the intersection of The Embarcadero/Beach Street. Most project visitors would approach the site along the sidewalks on the east side of The Embarcadero.

The middle sidewalk of the three parallel sidewalks west of the project site was observed to have impeded flow during the Saturday peak period, while the other two sidewalks had open pedestrian flow. West of Pier 39, pedestrian flow was observed to be unimpeded during the weekday and weekend peak periods, and impeded during the weekday noon hour.[12]

Essentially all project visitors would be pedestrians near the project site. The project would generate an estimated 2,720 pedestrian trips during the weekend peak hour of both the initial and future years. On weekdays, about 2,350 initial year and 1,900 horizon year pedestrian trips would be expected.

Of the total PM peak hour pedestrian trips generated by the project, approximately 50% could be expected to approach the project entrance from the west along The Embarcadero. Approximately 40% would be expected to approach from the south. These visitors would arrive from the pedestrian bridge across The Embarcadero/Beach, the signalized pedestrian crossing at Embarcadero/Beach, or the existing passenger loading area in front of the entrance to Pier 39. Another 10% could be expected to approach along the north side of The Embarcadero from the east.

The anticipated increases in pedestrian traffic along these sidewalks would not change any of the existing pedestrian flow service levels during weekday or weekend PM peak hours. Additional pedestrians using the signalized crosswalk at Embarcadero/Beach would not be likely to affect weekend traffic flow in The Embarcadero, since traffic stops frequently to allow pedestrians to cross under existing pedestrian flow conditions. During the week, when pedestrian flow is much lighter, the project pedestrian traffic would be more likely to increase the number of times The Embarcadero/Beach crosswalk is activated and stops traffic on The Embarcadero. However, since existing traffic and pedestrian volumes at the intersection are much lower during the week as compared to weekends, a few additional pedestrian crossings would not be likely to impede traffic flow.

Table 12, page 102, summarizes the existing pedestrian flow conditions and the projected project impact at the sidewalks on either side of the project site.

The heaviest pedestrian flows would occur immediately in front of the main project entrance. The proposed project entrance includes landscaping design which would help to guide pedestrians to the project entrance, while still providing adequate area to accommodate the expected pedestrian volumes.

Tour Bus/Passenger Loading

The main pedestrian entrance to the proposed project would be about 80 feet northeast of the existing Pier 39 passenger loading area. Passenger pick-up and drop-off for taxis, tour buses, limousines and vans would occur at the existing Pier 39 passenger loading area. No additional passenger loading space has been proposed.

Vehicles entering the passenger loading area would circulate as they do today, entering from and exiting onto northbound Embarcadero. Frequently, particularly on weekends during the tourist season, the existing passenger loading area fills up, forcing passenger vehicles to unload passengers on The Embarcadero. When such on-street loading occurs, one through travel lane on northbound Embarcadero is blocked. Combined with the Pier 39 garage queuing which occurs on weekends in the innermost northbound lane, this decreases the capacity of The Embarcadero northbound to a single through lane in the project vicinity. On weekdays, the innermost northbound lane on The Embarcadero is not needed to provide storage for Pier 39 garage traffic, so on-street loading, when it occurs, is less of a problem for traffic flow.

On-street passenger loading could also interfere with the planned MUNI F-Market line. The F-line would run along the northbound curb lane of The Embarcadero. Passenger loading in through lanes along The Embarcadero, as occurs today, could potentially block the F-line tracks.

Based on the project's estimated travel demand and the transportation mode split characteristics, the project would require approximately 200 feet of new passenger loading area to meet the estimated peak demand for taxi, limousine, tour bus, and van loading space. Additional passenger loading areas would be needed to prevent traffic

TABLE 12

EXISTING AND PROJECTED PEDESTRIAN FLOW REGIMES

	Weekday			
	Existing		Existing and Project	
Sidewalk Location	p/f/m[1]	Flow Regime[2]	p/f/m	Flow Regime
Embarcadero west of Pier 39[3]	0.68	Unimpeded	1.11	Unimpeded
Embarcadero east of Pier 39[4]	2.10	Impeded	2.20	Impeded

	Weekend			
	Existing		Existing and Project	
Sidewalk Location	p/f/m	Flow Regime	p/f/m	Flow Regime
Embarcadero west of Pier 39[5]	3.69	Impeded	3.90	Impeded
Embarcadero east of Pier 39[5]	1.23	Unimpeded	1.41	Unimpeded

[1] p/f/m - passengers per foot of effective sidewalk width per minute.

[2] For pedestrian flow regime definitions and descriptions, see Appendix B.

[3] Pedestrian counts conducted by DKS Associates, March 26, 1986.

[4] Pedestrian counts conducted by DKS Associates, March 18, 1987. Flow was observed for noon hour, which is the period of highest pedestrian flow during weekdays.

[5] Pedestrian counts conducted by DKS Associates, August 8, 1987.

Source: DKS Associates.

congestion on The Embarcadero from becoming worse, and to avoid blockage of future trolley tracks caused by on-street passenger loading, with the additional loading demand which the project would generate. A mitigation measure to reduce this impact is described in Chapter V. Mitigation. The project sponsor has agreed to implement this measure.

Construction Activity

During the construction period, transportation impacts would result from truck movements to and from the site during construction activity. Construction activities (concrete pouring and refinishing, and pier expansion) would generate an average of 10-15 truck movements per day from the site. Deliveries of materials would occur between 9:00 AM and 3:30 PM. The actual duration of construction activity would be approximately 14 months. During the construction period, the sidewalks fronting the project site would be affected, although they would not necessarily be closed. No temporary traffic lane closures would be required. Some lane blockages could occur when construction deliveries are made, however, most of the construction activity is scheduled for the middle of the day on weekdays when traffic conditions are not congested. Lane and sidewalk closures are subject to review and approval by the Department of Public Works.

The impact of construction truck traffic would be a slight lessening of capacities of access streets and haul routes because of the slower movements and larger turning radii of trucks. MUNI runs along Bay, The Embarcadero, and North Point Streets. Lane blockage on these streets by queued trucks, if it were to occur, would reduce the capacity of the street and could interfere with the operation of the MUNI system. Blockage during times of peak traffic flow would have greater potential to create conflicts than during non-peak hours because of the greater peak-hour numbers of vehicles in adjacent lanes and vehicles (autos and buses) that would have to maneuver around the queued trucks.

Temporary parking demand from construction workers' vehicles, and impacts on local intersections from construction work traffic, would occur in proportion to the number of construction workers who use automobiles. This may create a need for 10 to 30 temporary stalls.

The impact of construction truck traffic would be a slight lessening of capacities of access streets and haul routes because of the slower movements and larger turning radii

of trucks. MUNI runs along Bay, The Embarcadero, and North Point Streets. Lane blockage on these streets by queued trucks, if it were to occur, would reduce the capacity of the street and could interfere with the operation of the MUNI system. Blockage during times of peak traffic flow would have greater potential to create conflicts than during non-peak hours because of the greater peak-hour numbers of vehicles in adjacent lanes and vehicles (autos and buses) that would have to maneuver around the queued trucks.

CUMULATIVE IMPACTS

This section identifies transportation impacts of potential future development which was studied as part of the Northern Waterfront Study. The future development scenarios analyzed there have been updated to include cumulative projects proposed since the Northern Waterfront Study which were not on "soft sites," including the proposed project.[13] The following sections discuss future travel demand changes, and the corresponding impact on traffic, transit, pedestrian and parking conditions in the study area. The study area for the cumulative analysis includes the entire Northern Waterfront Study Area in addition to the smaller eight-intersection study area used for the rest of the Underwater World EIR transportation analysis. The list of intersections studied for the cumulative analysis was expanded from the Northern Waterfront Study to include the intersections of Powell/Beach, Stockton/Beach, The Embarcadero/Beach, Kearny/Bay, and Kearny/Francisco. These five intersections would be most affected by passenger car and tour bus traffic to and from the project site, the Pier 39 parking garage, and the 80 Francisco parking garage, which would be used by project visitors on weekends.

The planned extension of the historical F-Market trolley line into the Northern Waterfront has been incorporated into the cumulative traffic analysis. A number of potential track routes and configurations were considered initially. The choices have now been reduced to three. Two would be double-track alignments along The Embarcadero to a turnaround at Taylor Street or Hyde Street. Both double-track alignments would be identical in the project vicinity from Bay Street past Mason Street. The third potential alignment would be a single track configuration which would run north on The Embarcadero to Jefferson Street, westbound on Jefferson to Jones Street, south to Beach Street, and east on Beach Street back to The Embarcadero. Each of the potential F-line configurations would affect potential roadway geometrics along study area roadway segments which would share right-of-way with the F-line.

Cumulative Travel Demand

Travel demand has four basic components: trip generation, mode split, trip distribution, and trip assignment. Specific data for the Northern Waterfront area land uses were developed through a series of surveys of travel characteristics. These data were then applied to identify the amount of net new trips which would be generated in the study area. As part of the Northern Waterfront Traffic and Transportation Study, three land use scenarios have been evaluated, including Scenario A (Hotel/Retail), Scenario B (Office/-Retail), and Scenario C (Housing/Office). Based on trip generation, mode split, and trip distribution data collected within the study area, an assessment of travel was prepared. Scenario A would generate the greatest number of person trips, adding roughly 34,700 daily trips on weekdays and 39,610 trips on weekends. This is due mostly to the emphasis on retail and hotel land uses. During the weekday evening peak hour, Scenario B would generate the greatest number of net new vehicle trips (1,230) but the least number of vehicle trips for the weekend PM peak hour (550), when the overall level of traffic flow is greater. This is due to the emphasis on office land use. For this EIR, two scenarios were used in order to provide the most conservative traffic analysis for both weekdays and weekend days. Scenario A, Hotel and Retail Development, was used to analyze projected long-term development impacts on the Northern Waterfront for the weekend PM peak hour. Scenario B, Office and Retail Development, was used as the most conservative scenario to analyze long-term development impacts during the weekday PM peak hour. (Although Scenario A would generate more total new person trips during the weekday PM peak hour, due to office trip distribution patterns Scenario B would generate more net new vehicle trips and would result in six intersections with level of service "D" or worse as opposed to three with Scenario A.) A complete discussion of the surveys and summaries of trip generation, mode split, trip distribution and trip assignment for all three scenarios is in the Northern Waterfront Traffic and Transportation Study.[14]

Cumulative Trip Generation and Trip Distribution

Vehicle trip generation was estimated based on surveys of comparable land uses in the Northern Waterfront. The Hotel/Retail scenario would generate about 1,030 net new vehicle trips in the weekend PM peak hour. The Office/Retail Scenario would generate approximately 1,230 net new vehicle trips in the weekday PM peak hour. The auto driver

trip distribution was derived by eliminating person trips by non-auto modes such as transit or walking and recalculating the trip distribution. Vehicle trips to and from the proposed developments were assigned to the existing street network within the study area based on a combination of the derived auto driver trip distribution, the existing vehicle travel patterns, and the trip assignment information collected by DKS Associates as part of the pedestrian interviews conducted at the Wharf during 1985 and 1986. The weekday office trip assignment information was collected by DKS Associates at offices in the Northern Waterfront during 1985 and 1986.[15] Primary vehicle access routes to/from the Wharf are The Embarcadero, and to a lesser extent, Bay/Franklin Street, and Van Ness and Columbus Avenues. Table 13, page 107, shows the number of net new person trips for a typical weekday and weekend day, the mode split for those person trips, trip distribution and the number of vehicle trips for cumulative land uses under the Hotel/Retail scenario for weekends and the Office/Retail scenario for weekdays.

Future traffic volumes were computed by establishing specific traffic loadings of new land use scenarios in the Northern Waterfront area, growth in background traffic, and growth of through travel. Traffic from each land use scenario was estimated and assigned to the roadway network based on the trip generation, mode split, trip distribution, and trip assignment process. Growth in background traffic has been estimated based on historical trends of tourist activity in San Francisco. To account for expected growth in background traffic to the horizon year, existing traffic volumes within the Wharf have been increased by 14% for streets such as the north/south streets and Jefferson and Beach Streets.[16] Through traffic along Bay Street was increased by 6.1%. Through traffic on Bay Street was determined for the PM peak hour based on traffic count data collected for the Northern Waterfront Traffic and Transportation Study.

Existing Traffic Conditions

There are three factors which appear to have direct influence on congestion at the Northern Waterfront: parking, pedestrians and through traffic. Throughout the Northern Waterfront, traffic backs up near the parking garages due to the garage becoming full and traffic waiting to get in. This is particularly critical at the Pier 39 garage and affects traffic in a two-block vicinity of the garage on weekends, but generally only Powell Street on weekdays. Pedestrian concentrations affect traffic operation along Jefferson Street,

TABLE 13

POTENTIAL CUMULATIVE DEVELOPMENT
IN THE NORTHERN WATERFRONT AREA
(Trip Characteristics)

	Weekday[1]	Weekend[2]
TRIP GENERATION - Net New Person Trips		
Daily	28,610	39,610
PM Peak Hour	3,440	3,540
MODE SPLIT - New Person Trips in PM Peak Hour		
Auto	2,060	1,930
Transit	820	660
Walk	480	820
Other	80	130
Total	3,440	3,540
TRIP DISTRIBUTION - New Person Trips in PM Peak Hour		
Area		
SF (NE)	1,070	1,890
SF (NW)	400	150
SF (SE)	250	150
SF (SW)	330	170
East Bay	710	560
Peninsula	420	470
North Bay	260	150
Total	3,440	3,540
VEHICLE TRIP GENERATION - New Vehicle Trips		
Daily	10,620	9,790
PM Peak Hour	1,260	840

[1] Weekday analysis uses the Office/Retail Scenario "B."

[2] Weekend analysis uses the Hotel/Retail Scenario "A."

Note: Both scenarios include the proposed project and proposed developments at 111 Chestnut Street (residential/retail) and 55 Francisco Street (office).

Source: DKS Associates.

Taylor Street, and at the intersection of Beach and Hyde Streets. Pedestrian/vehicle conflicts reduce intersection capacities at these locations and often result in slow vehicle speeds and delays. Through traffic has its greatest effect on Bay Street, since it serves as a connection from the downtown to western San Francisco and the North Bay. Traffic generally backs up at Columbus Avenue and Bay Street during the PM peak hour.

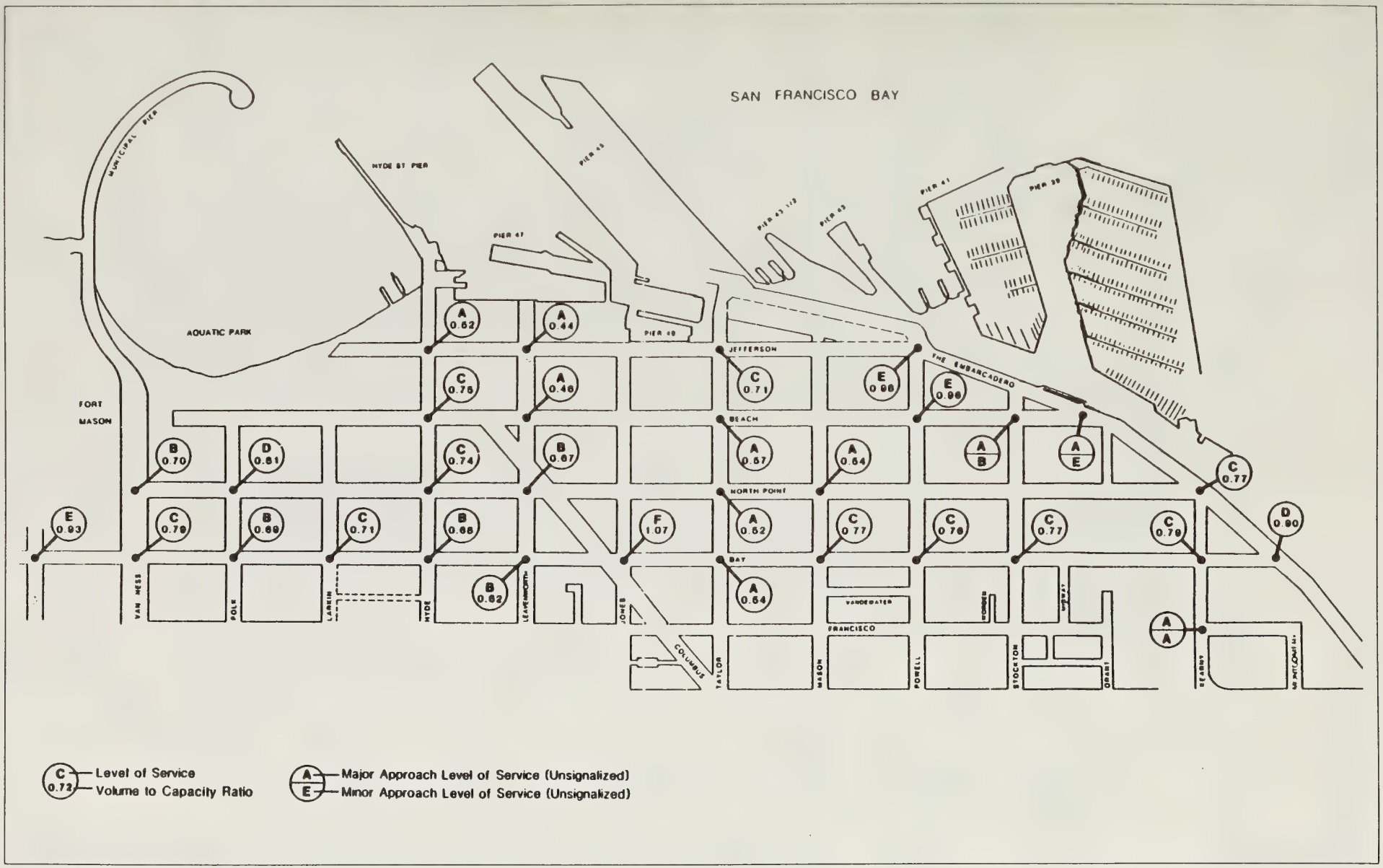
Congestion within the inner Wharf area tends to be localized at garage access points and in areas with heavy pedestrian activity. Level of service and volume-to-capacity ratios were computed for additional Northern Waterfront intersections beyond the vicinity of the Underwater World project site as part of the Northern Waterfront Study[17] and are summarized in Figures 29 and 30, pages 109 and 110, and Table 14, page 111. Several Bay Street intersections and the intersection of Beach/Hyde (on weekends) presently experience serious traffic congestion. Most other area intersections currently operate at LOS "A," "B," or "C" during the PM peak hour both on weekday and weekend days, which represent generally acceptable traffic conditions.

Future Cumulative Traffic Conditions

Upon build-out of the land use scenarios, future traffic operations along Bay Street would become more congested. Figures 29 and 30, pages 109 and 110, present the horizon year levels of service computed for a weekday and a weekend. Table 14, page 111, shows the V/C ratios in addition to the levels of service shown in Figures 29 and 30. With the existing circulation system, LOS "F" condition would occur at the intersection of Columbus/Bay on weekdays, with Franklin/Bay, Powell/Beach, and Embarcadero/Bay operating at LOS "E". More acceptable (LOS "D" or better), traffic conditions would occur on most streets located north of Bay Street.

● WEEKDAY HORIZON YEAR INTERSECTION PERFORMANCE

FIGURE 29



SOURCE: DKS ASSOCIATES

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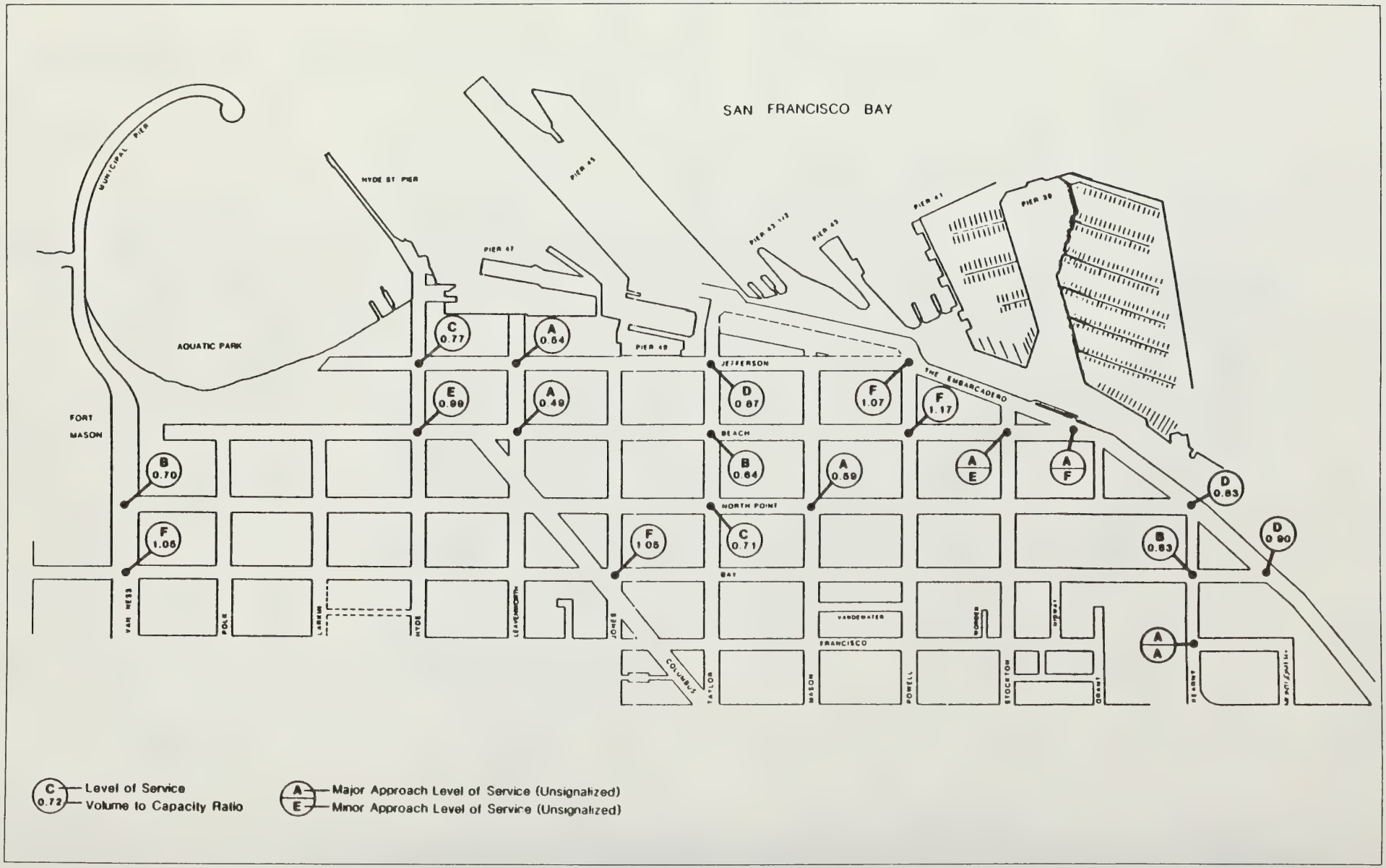
● WEEKEND HORIZON YEAR INTERSECTION PERFORMANCE

FIGURE 30



SOURCE: DKS ASSOCIATES

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TABLE 14

EXISTING AND PROJECTED INTERSECTION PERFORMANCE[1]
EXISTING CIRCULATION
(V/C Ratios, LOS)

Intersection	Existing[2]		Cumulative Development Including Project	
Weekday PM Peak Hour[3]				
Hyde/Jefferson	0.50	(A)	0.52	(A)
Leavenworth/Jefferson	0.44	(A)	0.44	(A)
Taylor/Jefferson	0.63	(B)	0.71	(C)
Embarcadero/Powell/Jefferson	0.72	(C)	0.98	(E)
Hyde/Beach	0.60	(A)	0.75	(C)
Leavenworth/Beach	0.42	(A)	0.46	(A)
Taylor/Beach	0.48	(A)	0.57	(A)
Powell/Beach	0.78	(C)	0.96	(E)
Van Ness/North Point	0.70	(B)	0.70	(B)
Polk/North Point	0.63	(B)	0.81	(D)
Hyde/North Point	0.58	(A)	0.74	(C)
Leavenworth/North Point	0.65	(B)	0.67	(B)
Taylor/North Point	0.49	(A)	0.52	(A)
Mason/North Point	0.48	(A)	0.54	(A)
Embarcadero/North Point	0.75	(C)	0.77	(C)
Franklin/Bay	0.85	(D)	0.93	(E)
Van Ness/Bay	0.69	(B)	0.79	(C)
Polk/Bay	0.62	(B)	0.69	(C)
Larkin/Bay	0.63	(B)	0.71	(C)
Hyde/Bay	0.63	(B)	0.68	(B)
Leavenworth/Bay	0.57	(A)	0.62	(B)
Columbus/Bay	0.92	(E)	1.07	(F)
Taylor/Bay	0.50	(A)	0.54	(A)
Mason/Bay	0.67	(B)	0.77	(C)
Powell/Bay	0.65	(B)	0.76	(C)
Stockton/Bay	0.65	(B)	0.77	(C)
Embarcadero/Bay	0.76	(C)	0.90	(D)
Kearny/Bay	0.74	(C)	0.79	(C)
Stockton/Beach[5]	A/A		A/B	
Embarcadero/Beach[5]	A/C		A/E	
Kearny/Francisco[5]	A/A		A/A	

TABLE 14, continued

Intersection	Existing	Cumulative Development Including Project
Weekend PM Peak Hour[4]		
Hyde/Jefferson	0.68 (B)	0.77 (C)
Leavenworth/Jefferson	0.50 (A)	0.54 (A)
Taylor/Jefferson	0.76 (C)	0.87 (D)
Embarcadero/Powell/Jefferson	0.93 (E)	1.07 (F)
Hyde/Beach	0.84 (D)	0.99 (E)
Leavenworth/Beach	0.43 (A)	0.49 (A)
Taylor/Beach	0.56 (A)	0.64 (B)
Powell/Beach	0.96 (E)	1.17 (F)
Van Ness/North Point	0.70 (B)	0.70 (B)
Taylor/North Point	0.61 (B)	0.71 (C)
Mason/North Point	0.50 (A)	0.59 (A)
Embarcadero/North Point	0.78 (C)	0.83 (D)
Van Ness/Bay	0.95 (E)	1.05 (F)
Columbus/Bay	0.93 (E)	1.07 (F)
Embarcadero/Bay	0.74 (C)	0.90 (D)
Kearny/Bay	0.56 (A)	0.63 (B)
Stockton/Beach[5]	A/C	A/E
Embarcadero/Beach[5]	A/F	A/F
Kearny/Francisco[5]	A/A	A/A

[1]Office/Retail and use scenario used for weekday analysis, and Hotel/Retail scenario for weekend analysis, in order to provide conservative analysis for both periods.

[2]Counts conducted by DKS Associates, 1986 and 1987.

[3]5:00 - 6:00 PM.

[4]3:00 - 4:00 PM. On weekends there would be fewer intersections impacted and those intersections that are impacted would have a decreased level of impact due to the lack of weekday commuter traffic.

[5]Unsignalized intersections. Table shows LOS for major approach/minor approach.

Source: DKS Associates.

Compared to existing weekday conditions, LOS at 16 of the 31 intersections would become worse. Intersections projected to be operating at levels of service "D" or worse are listed below. With existing traffic flows, only two intersections operate at LOS "D", "E", or "F."

Projected Horizon Year Weekday PM Peak Hour Conditions
Existing Circulation Pattern

LOS "D"	LOS "E"	LOS "F"
Polk/North Point	Franklin/Bay	Columbus/Bay
Embarcadero/Bay	Powell/Beach	
	Embarcadero/Powell/Jefferson	

During weekend conditions, LOS at 13 of the 19 weekend study intersections would get worse, with cumulative development generally degrading one level of service. Intersections projected to be operation at "D" or worse levels of service are listed below. Currently there are five intersections operating at LOS "D," "E" or "F."

Projected Horizon Year Weekend PM Peak Hour Conditions
Existing Circulation Pattern

LOS "D"	LOS "E"	LOS "F"
Taylor/Jefferson	Hyde/Beach	Van Ness/Bay
Embarcadero/North Point		Columbus/Bay
Embarcadero/Bay		Powell/Beach
		Embarcadero/Powell/Jefferson

Cumulative Transit Impacts

Existing transit ridership information indicates that with the exception of the cable cars, MUNI transit lines generally have capacity available in the Northern Waterfront, although many lines serving the Northern Waterfront operate at or near capacity at other points along their routes.[18] Weekday PM peak period load factors for the eight MUNI lines serving the Wharf average approximately 0.39 passengers per seat. The cable cars on the other hand are very full, with a load factor of about 1.77 passengers per seat in the weekday PM peak period.

Specific data were collected regarding cable car ridership on weekends. Patrons were observed boarding and alighting from cable cars between 10:00 AM and 6:00 PM at the two terminals located at Beach/Hyde and Bay/Taylor. The peak hourly patronage occurred between 12:00 and 1:00 PM with about 1,760 riders on both lines. Additionally, waiting times to board a cable car at the Beach/Hyde turnaround were surveyed. Between 12:00 noon and 6:00 PM, cable car waits range between 50 and 65 minutes. Wait times observed at the Bay/Taylor turnaround were somewhat less, averaging between 30 and 45 minutes throughout the survey.

Based on the observed waiting times and the relative flatness of the cable car patron count curve, it is apparent that the cable car lines are effectively operating at capacity, at least during the hours from 12:00 to 6:00 PM on weekend days. This leaves little room for ridership growth since substantial additional capacity from additional cars or shorter headways is very unlikely.

Based on the trip generation and mode split data, an estimate has been made of the expected increase in transit travel resulting from the two cumulative development scenarios. Table 15, page 115, summarizes the expected increase in weekday, Saturday, and weekday PM peak period transit ridership. Transit trips from the proposed Underwater World, the approved project at 111 Chestnut Street, and the proposed project at 55 Francisco Street are included.

The total number of additional weekday daily transit trips generated is expected to be about 7,600 riders. On a Saturday, the number of daily transit trips generated is expected to be 6,800. During the weekday PM peak period (4-6 PM), roughly 1,350 transit trips would be generated.

Projected weekday daily MUNI trips generated by cumulative development (3,600) represent a 15% increase in existing ridership. The rough estimates of ridership for the weekday peak period indicate that MUNI bus lines have adequate capacity to serve future demands within the Northern Waterfront, although some crowding would occur during the peak. Many of the lines serving the Northern Waterfront operate at or near capacity

TABLE 15

CUMULATIVE DEVELOPMENT IN NORTHERN WATERFRONT
PROJECTED INCREASE IN TRANSIT TRIPS - YEAR 2000

	Total	Muni	Cable Car	Other Transit
Weekday-Daily	7,580	4,520	2,450	610
Weekend (Saturday)-Daily	6,780	2,330	3,970	480
Weekday-PM Peak Period (4-6)	1,350	640	600	110

Source: DKS Associates, Northern Traffic and Transportation Study, March, 1987; Underwater World Traffic and Transportation Study, July 1988.

Note: Weekday based on office-intensive cumulative land use scenario (Scenario "B"); weekend based on hotel/retail intensive scenario (Scenario "A").

today at other points along their routes. The additional transit ridership from cumulative Northern Waterfront development would increase the number of these other points operating at or near capacity and/or the length of the daily peak ridership periods.

Weekday and weekend daily cable car trips would represent an estimated 6 to 10% increase in existing ridership. Because the cable car lines are currently operating at capacity on most days during the tourist season, it is not expected that the cable car system would be able to accommodate this additional demand without greater delays. Because of this, numbers shown in the Table 15, above, are intended to reflect future cable car demand rather than actual operating conditions. The planned MUNI F-Line extension could accommodate much of the excess cable car demand. The F-Line potentially could attract 10,000 daily patrons, including some 900 riders north of Market Street during the PM peak hour.[19] This would help relieve the overburdened cable car lines while improving transit accessibility to the Northern Waterfront and the project study area.

Cumulative Pedestrian Impacts

Pedestrian flows were counted at several locations in the Northern Waterfront. The pedestrian flow rate was analyzed for peak 15-minute periods on a weekday and weekend afternoon. The pedestrian flow rates reflect the number of pedestrians per foot of effective sidewalk width (unobstructed width) per minute. Cumulative pedestrian flows resulting from development throughout the Northern Waterfront were evaluated to determine their effect on pedestrian conditions.

The flow rates indicate that during weekdays, pedestrian flow is within the impeded flow regime or better. The heaviest existing weekday pedestrian flows occur on Jefferson Street. During weekends, pedestrian flow is heavy along The Embarcadero to Pier 39, along Jefferson Street and along Beach Street near Hyde. Constrained or crowded flow conditions occur at several of the counted locations. With future development, weekday pedestrian flow would degrade at Jefferson and Taylor with three locations experiencing crowded or constrained flow. On weekends with future development, nine locations would experience constrained, crowded or congested flow regimes. In particular, the south side of Jefferson Street near Taylor would become congested, which represents unacceptable pedestrian conditions. Flow conditions along The Embarcadero would be degraded to constrained flow.

The greatest pedestrian problem in the Northern Waterfront area is the lack of clear pedestrian walkways. The street artists, vendors, crab/shrimp sales and arcades nearly eliminate clear walking lanes and result in congestion due to people conducting business. Alternative paths are limited and do not fall within the primary lines of activities. Walk trips are essential to the transportation system in the Northern Waterfront. Many of the shopping trips are linked together by making stops at several stores or other activities.

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[1]Other studies which the Underwater World transportation analysis draws on include:

City and county of San Francisco, Northern Waterfront Traffic and Transportation Study, Final Consultant's Report, by DKS Associates, March 1987. This document is the primary source for the cumulative analysis.

City and County of San Francisco, Final Environmental Impact Report: Super 8 Hotel (85.111E) and Clarion Hotel (85.114E), certified October 22, 1987.

City and County of San Francisco, Underwater World Aquarium at Pier 39, Traffic and Transportation Study, by DKS Associates, May, 1988.

[2]City and County of San Francisco, Final Environmental Impact Report: Super 8 Hotel (85.111E) and Clarion Hotel (85.114E), certified October 22, 1987.

[3]Based on information provided by Clive Jones, Economics Research Associates (ERA), February 26, 1988. The people mover underneath the aquarium would be 400 feet long by six feet wide, a total of 2,400 square feet. It could accommodate approximately 350-400 people at any one time, assuming 6-7 square feet per person. The people mover would make two revolutions per hour, for an hourly capacity of 700-800 per hour. A maximum of 900 per hour was used as a conservative figure for the analysis, which accounts for project patrons in the gift shop and above-tank viewing areas. With visitors admitted from 10:00 AM to 12 midnight, the hours of operation of Pier 39 restaurants, the maximum daily capacity of the project would be 12,600 (14 * 900). This maximum capacity-controlled level of attendance could be exceeded in the initial year without attendance controls, based on the analysis of potential project penetration into tourist and resident markets described in the background study to this EIR ("Underwater World at Pier 39 - Traffic and Transportation Study," 1988, prepared for the city and County of San Francisco by DKS Associates). Peak hour trip generation estimates were developed using this maximum daily attendance and patterns of visitor arrivals and departures to and from the Northern Waterfront. The analysis of project impacts is intentionally conservative; as a means of comparison, the Monterey Aquarium, which currently limits admission to 10-,000 daily visitors, has 70,000 square feet of public exhibit areas and observation decks as compared to 41,100 square feet for the proposed project.

[4]Based on the actual market penetration of the Monterey Bay Aquarium in its first three years of operation. Further information concerning the unconstrained attendance demand of the project is available in the City and County of San Francisco, Underwater World Aquarium at Pier 39: Traffic and Transportation Study, by DKS Associates.

[5]Documentation of methodology used to derive estimates of new versus linked trips is contained in the Underwater World at Pier 39: Traffic and Transportation Study, (1988) prepared for the City and County of San Francisco by DKS Associates.

[6]City and County of San Francisco, Northern Waterfront Traffic and Transportation Study, Final Consultants Report, by DKS Associates, March 1987, p. A-1.

[7]City and County of San Francisco, Department of City Planning, Northern Waterfront Traffic and Transportation Study, Final Consultant's Report, by DKS Associates, March, 1987, pp. A-14 to A-27. The mode split for the project was developed from retail surveys of travel to the Northern Waterfront. The retail mode split was used since it is the best factual data on travel to the Fisherman's Wharf area that reflects regional

travel patterns. Based on mode split information from the Monterey Bay Aquarium, the percentage of trips made by tour buses for the project is greater than the percent of trips by tour buses based on the retail surveys.

[8]Traffic counts conducted by DKS Associates, 1986 and 1987.

[9]Based on telephone communication with Rebecca Kohlstrand, Department of City Planning, April, 1987.

[10]City and County of San Francisco Planning Code, Article 1.5

[11]DKS Associates, Northern Waterfront public parking survey Thursday, July 9, 1987.

[12]DKS Associates, pedestrian counts taken March 18, 1987, March 21, 1987, and August 8, 1987 (east of Pier 39); March 29, 1986 and August 8, 1987 (West of Pier 39).

[13]The projects include Underwater World, 111 Chestnut Street (residential with some retail), and 55 Francisco Street (office).

[14]City and County of San Francisco, Northern Waterfront Traffic and Transportation Study, Final Consultants Report, by DKS Associates, March 1987, pp. A-6 to A-27

[15]Weekday surveys of office employees at 201 Filbert Street (February 1985, by the Department of City Planning) and Haslett Warehouse (April, 1986 by DKS Associates).

[16]Growth in background traffic in the Northern Waterfront was assumed to occur due to increased tourist activity not associated with new land uses. That is to say, if no change in land use occurred in the study area, the attraction of Fisherman's Wharf would generate new trip activity due to increased tourism. The estimate of growth was based on historical tourism trends projected forward 15 years. (San Francisco Visitors and Convention Bureau, 1985).

[17]City and County of San Francisco, Northern Waterfront Traffic and Transportation Study, by DKS Associates, March, 1987, pp. 25-29.

[18]Based on conversations and data provided by Bill Wycko and Rebecca Kohlstrand, San Francisco Department of City Planning, August, 1986 and February, 1988. Bus boarding and alighting data based on route profile reports prepared by MUNI, Spring 1984, and Department of City Planning boarding and alighting counts, Spring 1986. Cable car data provided by the MUNI Information Office and the Department of City Planning.

[19]California Department of Transportation, I-280 Transfer Concept Program - Subtask 2.2.2: Transportation Performance Measures, by DKS Associates, July 1983, Tables VII-4 and VII-5.

D. AIR QUALITY

In the initial year the proposed project would result in an increase of up to 1,560 (see Table 9 p. 95) vehicle trip ends (vte) over existing volumes. In future years this would drop to up to 1,170 (see Table 9). Air quality impacts on local intersections and freeway on-ramps would not be measurable (see Chapter IV, Transportation for a discussion of trip generation).

The Bay Area Quality Management District (BAAQMD) considers that development generating less than 2,000 vte per day would not have a measurable impact on air quality and therefore does not require an air quality analysis for such developments. Where cumulative development could measurably contribute towards regional and/or local emissions, the District may require an air quality analysis.[1] Project-generated emissions would be less than the threshold established by the BAAQMD.

Nitrogen oxides (NO_x) and hydrocarbons (HC) are both chemical precursors of ozone. Motor vehicles emit more NO_x than HC, and the emissions from building natural gas combustion would consist primarily of NO_x. As demonstrated by the Livermore Regional Air Quality model (LIRAQ) regional ozone computer simulations conducted for the 1982 Bay Area Air Quality Plan, an increase in the future NO_x emissions compared to HC emissions would lead to a decrease in ozone compared to present levels. As future NO_x emissions from cumulative development in San Francisco would exceed future HC emissions, this development would not lead to an increase in total Bay Area ozone concentrations.

At the same time, total emissions of both NO_x and HC are expected to decrease in San Francisco. Total NO_x emissions would decrease in San Francisco by about two percent from 1984 to 2000, but would increase in the Bay Area by about 5% from 1984 to 2000. It is possible that excess NO_x emissions generated by cumulative development could increase ozone and/or nitrogenous oxidant concentrations further downwind, outside the Bay Area. In addition, NO_x emissions generated by cumulative development throughout the Bay Area could increase acid rain further downwind, outside the Bay Area, though to a relatively small extent due to the magnitude of the increase and to dilution over time and distance.

Emissions of particulates resulting from construction and from vehicle trips generated by the projects and cumulative development would increase TSP concentrations, which could increase the frequency of the particulate (PM-10) standard violations in San Francisco, with concomitant health effects and reduced visibility.[2]

Emissions of sulfur oxides (SO_x) generated by the projects and by cumulative development would not bring San Francisco's sulfur dioxide (SO_2) concentrations measurably closer to violating the standard.

The 1982 Bay Area Air Quality Plan contains strategies which consist primarily of HC and CO emission controls on stationary sources and motor vehicles, and transportation improvements, and are aimed at attaining the federal ozone and CO standards. As discussed above, emissions associated with cumulative Northern Waterfront area development are not projected by this EIR to increase ozone concentrations, and thus would not conflict with the objectives of the 1982 Bay Area Air Quality Plan regarding ozone.

Because the project would generate traffic below the 2,000 vte per day threshold established by the BAAQMD, the project's effects on air quality would not be considerable when viewed in conjunction with the effects of cumulative development.

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[1] Future traffic from cumulative Northern Waterfront area development was modeled in the Northern Waterfront Traffic and Transportation Study, Final Consultants Report, March 1987.

[2] State standards for particulate matter changed in 1983 and federal standards changed in 1987 to concentrate on fine particulate matter which has been demonstrated to have health implications when inhaled (PM-10). Only those particulates 10 microns or less in size are measured under the PM-10 standard. The BAAQMD (Thomas Perardi) has stated that TSP includes about 50-60% of particulates of 10 microns or less; thus, the TSP standards are generally equivalent to the PM-10 standards. BAAQMD is presently monitoring PM-10 at seven Bay Area monitoring stations, including the 16th and Arkansas station in San Francisco.

E. WATER QUALITY AND MARINE BIOLOGY

IMPACTS

- To understand how the proposed Underwater World aquarium might affect water quality it is necessary to understand how the aquarium water circulation and filtration system would work. The aquarium would consist of a large tank with a capacity of 707,000 U.S. gallons. Water in the aquarium would be continuously recirculated. The recirculating water would pass through a filter to remove particulate material and ensure that the water in the aquarium remains clear. A small amount of water would be continuously discharged from the recirculating system into the Bay. A corresponding small amount of water would be drawn from the Bay to make up the volume in the aquarium tank.

The make-up water would pass through a separate pre-filter and would be disinfected with ozone before being added to the aquarium, preventing parasites and bacteria present in Bay water from entering the aquarium. Ozone can be a health hazard; however, standard operating procedures for ozone production and handling avoid such hazard. The ozone would be generated in a separate room at the second floor level of the proposed project. The room would be provided with an ozone monitor and alarm. This is standard equipment for the system. Ozonation of the circulating sea water is achieved by injection via a porous stone diffuser into a contact tower located adjacent to the generation room. As the ozone passes through the aquarium water, the ozone is broken down and has a disinfecting property. Any residual ozone which may discharge from the free water surface at the top of the tower is collected in a cowling, or enclosed hood, and passed through a catalytic ozone destruct unit before being discharged to the air above the proposed project building.

The aquarium would produce two wastewater discharges that could potentially affect Bay water quality. The first would be a generally continuous discharge from the recirculating system. This discharge, referred to as the blowdown, would have a flow rate ranging from 50 gallons per minute (0.07 mgd) to 270 gallons per minute (0.38 mgd). The quality of blowdown water would be identical to the quality of water in the aquarium. It would be chemically similar to Bay water but would contain slightly elevated levels of nitrogen and total dissolved solids and traces of conditioning chemicals used to inhibit the growth of

parasites and bacteria. It would be free of bacteria and less turbid than Bay water. Its temperature would be similar to that of Bay water. As would be expected blowdown water would not be injurious to the health of fish and other estuarine organisms; in fact the quality of the water would have been specifically managed to be suitable for aquatic life. The blowdown discharge would be in compliance with all applicable effluent limits and water quality standards and would produce no adverse effects on Bay waters and their denizens. The overall quality of the blowdown water would be approximately equal to the Bay water, with minor variations as described above. It could be expected that the BOD of blowdown water would be less than 1 mg/l, like the entering Bay water. This would be clearly within the effluent limits for BOD of 30 mg/l set by RWQCB.

The second discharge would be the intermittent flow of water used to clean or backwash the filters. Periodically, up to three times per day, the filters would be backwashed with water drawn from the aquarium to remove accumulated particulate materials and to restore the effectiveness of the filters. The volume of the filter backwash discharge

would range up to 20,000 gallons per day. Each backwash episode would last five or six minutes. Backwash water from the recirculating system filters would amount to 15,000 gpd and would be similar in quality to Bay water except that it would have a suspended solids content of about 280 mg/l, a biochemical oxygen demand content of about 113 mg/l and would contain high levels of bacteria. The suspended material would consist primarily of fish feces and excess food particles. Backwash water from the pre-filter or make-up filter would amount to about 5,000 gpd and would be similar to Bay water but would contain an unknown concentration of suspended material previously removed from incoming Bay water.

All wastewater discharges from the aquarium other than aquarium blowdown and filter backwash water would be discharged to the city sewer system. These discharges would include sanitary sewage, washdown water and any discarded water from specimen tanks used for chemical or pharmaceutical treatment of diseased or injured fish or invertebrates.

The filter backwash water discharges would not meet the effluent limits shown in Table 4, page 62, in Section III.E. While backwash from the pre-filter would not meet the suspended solids requirement of 30 mg/l it is unlikely that adverse environmental effects would result because the suspended material would consist of silt and algae previously removed from Bay water. Backwash from the recirculating system filters would have a greater pollution-causing potential but one which could be mitigated by various means.

The project proponent would have to apply to RWQCB for a NPDES permit and abide by any conditions the Board chooses to impose. The exact nature of the permit conditions cannot be known until meetings with the Board staff have been held and a permit application filed. Because of the volume of the discharge and its nature it is possible the Board will waive the requirement for an NPDES permit.

The aquarium would house only those species native to Northern California Pacific and San Francisco Bay waters and so would not represent a source of non-native escapees. Exotic or non-native species inadvertently introduced into the Bay could harm the existing flora and fauna.

During construction, small quantities of potentially hazardous materials, such as solvents, paints, fuel, and resins would be used at the site. The nature of construction is such that no large quantities of fuel or other construction materials would be stored at the site. The risk of a damaging spill is slight but could be reduced further by requiring that the contractor prepare a plan for hazardous materials storage and spill clean-up.

The project footprint of the new platform would be supported by approximately 114 piles ranging from 18 to 48 inches in diameter.[1] Approximately 16,000 sq.ft. of open Bay waters would be shaded by the new structure. Only a portion of this would represent new shaded area because the proposed project would replace existing boat slips. Shading of the surface water layers would make conditions under the structure less conducive to phytoplankton (microscopic water plants) growth than elsewhere in the Bay. Phytoplankton play an important role in the Bay/ocean food chain, serving as the primary food for small benthic (ocean bottom) and pelagic (open water) organisms. The severity of any adverse impacts would be limited by the fact that under average tidal conditions a particular water mass would not be underneath the structure for more than one minute. The structure would reduce light intensity in the benthic zone which may cause a shift in community structure toward organisms adapted to low light levels.

Pile driving would destroy benthic organisms inhabiting approximately 1,100 sq.ft. of the Bay bottom. More mobile organisms would be unaffected. During pile driving, sediments would be disturbed, producing a short-term increase in water turbidity.

Approximately 1,100 sq.ft. of benthic habitat would be permanently eliminated by the piles. A larger area of benthic habitat would be temporarily disturbed during the pile driving phase of project construction. The piles would provide new habitat for attached intertidal organisms and possibly fish species that prefer reef-like or sheltered habitat.

The new structure could affect water circulation in the vicinity of the site. Earlier studies of the Pier 39 area note that current speeds in the area are high as tidal flow follows the shoreline of the San Francisco Peninsula.[2] Because the new structure would not act as a barrier to flow, no large eddies or quiescent pools would be created. Average current speeds through the area under the proposed structure would be slightly less than they are today (by 10% or less). New piles would cause the current to slow slightly upstream of the piles and accelerate between the piles. At no time would current speeds

be reduced below present levels by a sufficient amount to appreciably affect sedimentation.

[1]Lynn Teasley, Harrison, Teasley & Associates, Inc., telephone communication, July 29, 1988.

[2]City and County of San Francisco, "Negative Declaration for Pier 39 Breakwater System," Appendix A, letter to Pier 39 Limited Partnership from Hugo Fischer, Inc., March 7, 1983.

F. GEOLOGY/TOPOGRAPHY

The proposed aquarium would be constructed on piles in the Pier 39 marina at about +2.4 feet San Francisco Datum (SFD). As discussed in the Geology/Topography Setting Section of this report, the underwater ground material consists of 25 to 51 feet of Upper Bay Mud, 57 to 93 feet of Lower Bay Clay interbedded with dense sand, underlain by Franciscan Assemblage bedrock at -123 to -164 feet SFD.

Upper Bay Mud generally is unsuitable for foundations because of its poor seismic stability and highly variable supporting capabilities.[1] The impacts of supporting the proposed structure on mud would be avoided by setting piles into more stable sands below the mud. A combination pile system would be used which would incorporate end support and friction support. Hollow, pre-cast pre-stressed concrete piles, ranging from 18 to 48 inches in diameter and 70 feet long would be driven into the Lower Bay Clay and dense sand. By driving the piles through the overlying formations into the firm sand, end support for the vertical weight would be developed while the friction from the large diameter piles would ensure against possible up-lift caused by movements of sub-surface materials.

A seismic response study has been completed for the project, analyzing the anticipated soil and structural responses for the design earthquake[2] (the 100-year return event = M 7.25, 9 miles from the site and M 8.25, 22 miles from the site; the 500-year event = M 8.25, 8 miles from the site).[3] The results indicate ground accelerations of 0.30 g and 0.41 g, at the base of the Bay Mud, for the 100-year and 500-year events respectively. The detailed structural design parameters (discussed on pages 14 and 15 of the seismic response study) would be incorporated into the project. The detailed structural design study, taking account of the full seismic interaction of the structure and the foundation soils would be completed by a local California-registered engineering consultant. The project sponsor would follow the recommendations of these investigations for demolition, pile driving and construction at the site.

The structure would be required to meet the specifications of the San Francisco Building Code for seismic design concerning the amount of allowable sway, attachment of partitions and decorative elements, and provision of emergency electricity and water services. During construction, the building contractor would be required to comply with

Section 2903 of the San Francisco Building Code. The Building Code in force at the Port (the same version of the Uniform Building Code used by the Bureau of Building Inspection) requires that new buildings and their foundations be designed by professionally-licensed engineers to meet a series of parameters intended to make new buildings withstand seismic stress. On Port of San Francisco property, this requirement is implemented by the Port Engineering Department as part of the permit review process. As a result, new buildings generally result in less seismic risk than older buildings. Port Engineering Department engineers have expertise in the construction of pile supported structures, and those subjected to the marine environment.[4]

The structural design would incorporate the response of the acrylic tank and tunnel to the design earthquake. The tank would have a conventional reinforced concrete roof as the primary bracing element. The tank would be designed to resist the hydrostatic and lateral dynamic loading of the water contained in the tank. The weight of the water (hydrostatic pressure, or downward force) in the tank would be greater than the lateral dynamic loading (horizontal force) from the water, thereby ensuring stability of the tank. The supporting piles would be cantilevered above the Bay Mud to resist potential seismic loading of the junction between the pile cap and the tank structure.[5]

In a moderate earthquake (7.5 on the Richter scale), minor damage would occur to the tank. In a major earthquake (8.5+ on the Richter scale) severe damage would occur, but there would be no collapse of the tunnel or tank. The acrylic tunnel would be anchored in a gravel base and sealed with an elastic material that could articulate (flex) to prevent fracturing.[5]

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[1] C. H. Lee and M. Praszker, "Bay Mud Developments and Related Structural Foundations," Geologic and Engineering Aspects of San Francisco Bay Fill, California Division of Mines and Geology, Special Report, No. 97, 1969, pages 41 to 86.

[2] Design earthquake - covers all possible seismic parameters that a structural design would have to resist during a major earthquake. This would include: (1) the magnitude of the earthquake, (2) the distance from the site to the epicenter, (3) the lateral ground acceleration produced by the earthquake, (4) the site period (ground response), and (5) direction of the seismic event.

[3]Kaldveer Associates, Seismic Response Study Investigations for Underwater World at Pier 39, San Francisco, California, Project K232-6, prepared for Harrison, Tensley and Associates, Inc., 15 March 1988.

[4]Vello Kisk, Port Engineer, telephone conversation, 1 September 1987.

[5]John Harrison, Engineer, Harrison, Teasley and Associates, Inc., telephone conversation, 22 February 1988.

G. CONSTRUCTION NOISE

Ambient noise in the project vicinity is typical of noise levels in commercial areas of San Francisco, which are dominated by vehicular traffic, including trucks, cars, Muni buses and emergency vehicles.

Construction of the proposed project would take place over about a 14 month period, and would increase noise levels in the surrounding areas. Construction noise levels would fluctuate depending on construction phase, equipment type and duration of use, distance between noise source and listener, and presence or absence of barriers between noise source and listener. To estimate probable noise impacts, this analysis assumes typical equipment and construction techniques. Table 16, page 129, shows typical exterior noise levels associated with the different phases of construction (see Appendix D for a table of typical noise levels found in the everyday environment). With windows open interior noise levels at 50 feet from the noise source would be about 10 to 15 dBA less than those shown in Table 16. Closed windows would reduce noise levels by about 20 to 25 dBA below those shown in Table 16.

Construction noise is regulated by the San Francisco Noise Ordinance (Article 29 of the City Police Code). The ordinance requires that sound levels of construction equipment other than impact tools not exceed 80 dBA at a distance of 100 ft. from the source. Impact tools (jack hammers, pile driver impact wrenches) must have both intake and exhaust muffled to the satisfaction of the Director of Public Works. Section 2908 of the Ordinance prohibits construction work at night, from 8:00 PM to 7:00 AM, if noise would exceed the ambient noise level of five dBA at the project property line, unless a special permit is authorized by the Director of Public Works.

Construction would occur in several stages: demolition and clearance, pile driving, frame erection, and exterior and interior finishing.

Throughout the construction period there would be truck traffic to and from the site, initially hauling away debris and then delivering building materials.

TABLE 16

TYPICAL COMMERCIAL/INDUSTRIAL CONSTRUCTION NOISE LEVELS AT 50 FEET FROM THE SOURCE

Construction Phase	Duration of Phase (Weeks)[1] Proposed Project	Average Noise Level (dBA)
Ground Clearing	1	84
Foundations[2]	8	78
Erection	26	85
Exterior Finishing	26	89

[1]Phases of construction would overlap.

[2]Time includes seven to nine weeks of pile driving. (Noise levels during pile driving could reach 105 dBA at 50 feet.)

Source: Bolt, Beranek and Newman, December 13, 1971, Noise from Construction Equipment and Home Appliances, vs. Environmental Protection Agency.

Ground clearing would involve the demolition of the southeasterly section of the Pier 39 building and road section, as well as approximately 16 boat slips along docks A and B in the marina, as shown in Figure 3, page 19. Pile driving would then occur intermittently over a seven to nine week period in which approximately 114 piles would be driven. Because holes cannot be pre-drilled underwater, engineers would use a high-pressured jet placed inside the four-foot diameter pile. This jet would inject high-pressured water at the base of the pile, forcing Bay Mud away from the path of the pile.[2] Noise levels, when the pile is struck, could reach 105 dBA at 50 feet. The Department of Public Works allows pile driving operations under certain conditions, which may include specifying relatively quiet equipment, predrilling pile holes, and/or specifying hours of operation to reduce the number of people exposed to noise effects.

Other major noise sources during construction would include concrete pumpers, air compressors, generators, haul trucks, power saws, and impact torque wrenches. The marina is the closest noise-sensitive use. Due to the lack of shielding, the marina would be impacted by pile driving and other construction-related activities to a greater degree than other uses. The full extent of peak noise generated by unmitigated pile driving, about 110 dBA at 25 feet and 105 dBA at 50 feet, would be experienced by outdoor users of the marina. Inside boats 50 feet from the pile driving activity, noise levels woule be approximately 80 to 90 dBA with windows/doors open and from about 70 to 75 dBA with windows/doors closed. The noise of pile drivers, in particular, would stand out over the background noise level in the marina which is currently dominated by traffic noise. This level of noise would be disturbing to individuals and would be high enough to interfere with conversation between people and by telephone. Noise levels would be high enough to interfere with concentration, radio listening, watching television and would interfere with sleep.

The next nearest noise-sensitive uses are the shops, restaurants, and offices on Pier 39 itself. Most of these would be shielded from the piledriving by the existing buildings adjacent to the Underwater World site. There are, however, several buildings along the east side of Pier 39 which have operable windows and which would look directly onto the pile driving activity. The next nearest uses are the Academy of Art College, the Blue Shield office building, and the office building on Beach Street between the Blue Shield building and the Academy of Art College. Both the Academy of Art College and the Blue Shield office building have fixed windows, while the office building between them relies on open windows for ventilation. These buildings would all be about 400 feet from the piledriving activity. The next nearest sensitive uses are the Northpoint Apartments. The nearest apartments are about 600 feet from the piledriving area; however, these closest apartments are shielded by intervening buildings. The nearest Northpoint Apartments with line-of-sight to the piledriving activity (across the Kirkland bus yard) are about 900 feet from the piledriving activity. The next nearest uses are the Sheraton Hotel and the Travel Lodge at Fisherman's Wharf, both located about 960 feet from the piledriving area. Rooms in the Sheraton Hotel would have line-of-sight to the piledriving activity while rooms in the Travel Lodge would be shielded somewhat by the intervening parking structure on the block bounded by the Embarcadero, Beach Street, Powell Street and Stockton Street.

At a distance of 50 feet, piledrivers generate noise levels of about 105 dBA as measured on the fast response in the sound level meter.[3] The noise levels inside a building would depend upon its distance from the piledriving activity and the transmission loss of the building facade. The transmission loss of the building facade would primarily depend upon whether the windows facing the piledriving activity are open or closed.

Noise levels inside the offices on the east side of Pier 39 overlooking the piledriving would range from 75 to 90 dBA inside with the windows open and from about 71 to 75 dBA inside with the windows closed. These noise levels would be high enough to interfere with conversation between people in an office and also high enough to interfere with telephone conversation. During piledriving, the noise levels could be expected to be very annoying in these offices. Noise levels inside the restaurants and buildings on the Pier that do not directly face the piledriving (the majority of buildings) would reach 60 to 65 dBA for the

closest buildings and 50 to 55 dBA for those shops at the north end of the Pier. While the noise levels generated by piledriving activity would be audible in the closest shops and restaurants, the noise of the piledrivers would not stand out obtrusively above the relatively high background noise levels in these shops and restaurants.

Noise levels inside the Academy of Art College and the Blue Shield office building would reach 55 to 60 dBA. These noise levels would be audible but would not be expected to interfere with conversation. These noise levels, however, could be annoying to workers in offices directly facing the facility due to their continuous and repetitive nature. Noise levels inside the office building directly opposite the proposed project between the Academy of Art College and the Blue Shield office building would reach 72 dBA, as this building relies on open windows for ventilation. The noise levels generated by the piledrivers would interfere with conversation. If these windows are closed, noise levels would not be expected to interfere with conversation but would be expected to be annoying.

Noise levels inside the Northpoint Apartments that have line-of-sight to the proposed piledriving activity would reach 65 dBA inside with the windows open and about 60 dBA inside with the windows closed. These noise levels would be noticeable during the daytime and could be annoying to people that spend their day at home. These noise levels are high enough to interfere with listening to the radio, watching television, etc. At night, the noise levels would be high enough to interfere with sleep. Similar noise levels would be expected in the Sheraton Hotel. Noise levels in the Travel Lodge would be about five to ten decibels lower (due to shielding by the adjacent parking structure).[4]

Vibration from the impact during pile driving would be felt in adjacent and nearby buildings, especially in the tourist retail shops of Pier 39, offices across the street (Blue Shield) and residences in the North Point Apartments (about 600 feet away). These vibrations have been found to be more disturbing to some people than the high noise levels. General stress reaction has been observed in humans exposed to brief sounds of 76 dBA.[5] Noise levels greater than 70 dBA would require people to close the windows or shout to communicate. Intermittent noises, such as pile driving noise, reduce the perception of control over the environment. This loss of control frequently results in a

depressed mood and depressed motivation.[6] Repeated impulses and intermittent noise of higher level appear more likely to disrupt performance, than continuous or steady noise of comparable level.[7]

In summary, during the majority of construction activities, noise levels would be expected to be at or above existing levels in the area. There would be times, particularly during the operation of pile drivers or impact wrenches, when noise would interfere with indoor activities of the surrounding buildings, and the retail shops and restaurants on the rest of Pier 39. The project sponsor would notify shop owners on Pier 39 of the piledriving activity. Notification was given to shop owners when the Pier 39 Breakwater was installed.

The proposed project would include several mitigation measures which would contribute to a lessening of potential construction noise impacts from the projects, including requirements that impact tools and equipment used at the project site have intake and exhaust mufflers, and that contractors use electric rather than diesel equipment, construct a noise barrier around the site and use a hydrojet to minimize the number of blows per pile. The project sponsor has also agreed to limit the hours of pile driving operation to the hours of 8:00 AM to 6:00 PM to minimize interference with people sleeping in the nearby Northpoint apartments. The impact of piledriving activity would be minimized by using the hydrojet technique as proposed by the project engineers. The benefits of this method are that by using the hydrojet to remove material from in front of the pile, it reduces the number of blows necessary to seat the pile.

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[1] A decibel (db) is a logarithmic unit of sound energy intensity. Sound waves, traveling outward from a source, exert a force known as sound pressure level (commonly called "sound level"), measured in decibels. A dBA is a decibel corrected for the variation in frequency response of the typical human ear at commonly encountered noise levels. Leq is the equivalent steady-state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period. Lmax is the maximum noise intensity reached during the period of time of the measurement.

Ldn, the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises; noise between 10 PM and 7 AM is weighted 10 dBA higher than daytime noise.

[2]John Harrison, Harrison, Teasley and Associates, Inc., project engineers, telephone conversations, September 17, 1987 and February 29, 1988.

[3]A fast response setting on the sound level meter measures the average noise level for 1/10 of a second. This fast response setting gives a better reading of noises occurring in a short duration (such as piledriving).

[4]Rich Illingsworth, Proposed Pier 39 Aquarium -- Piledriving Noise Assessment, Illingsworth and Rodkin, Inc., letter April 15, 1988.

[5]The Central Institute for the Deaf, Effects of Noise on People, U.S. EPA, 1971.

[6]Sheldon Cohen, et al., "Cardiovascular and Behavioral Effects of Community Noise," American Scientist, Volume 69, October 1981.

[7]National Institute of Occupational Safety and Health, Occupational Exposure to Noise, U.S. Department of Health, Education and Welfare, 1972.

H. GROWTH INDUCEMENT

The Fisherman's Wharf area is the most concentrated area for tourism in San Francisco. With such major attractions as Ghirardelli Square, the Cannery, Alcatraz Island and Pier 39, the area is heavily used and constitutes an important source of revenue for the City. Tourists arrive at the Fisherman's Wharf area by foot, car, cable car, trolley car, bus, taxi, boat and ship (passenger terminal at Pier 35).

● The proposed project would result in 45,300 gross square feet of new space in the Fisherman's Wharf area. While it is anticipated that many visitors to the aquarium would visit Fisherman's Wharf with or without the project or stay at hotels in the Fisherman's Wharf area and along the Lombard Street hotel corridor, the proposed project would contribute to additional tourist growth in Fisherman's Wharf. Additional visitors to the area as a result of the proposed aquarium could result in more demand for hotels, restaurants and other tourist-serving commercial activities.

The proposed aquarium would not displace any low-income residents from the project area and would not require any new construction of or extension of public services or utility systems, since it would occur in an already developed urban setting. Most aquarium employees would not be new to the area, and thus would not increase demand on public services.

V. MITIGATION MEASURES

In the course of project planning and design, measures have been identified that would reduce or eliminate potential environmental impacts of the proposed project. Some of these measures have been or would be adopted and implemented by the project sponsors, project architects or contractors, and are proposed as part of the project. Some measures are under consideration and others have been rejected. Implementation of some measures may be the responsibility of public agencies. Some of these measures mitigate impacts that may not be found to be significant.

Each mitigation measure and its status are discussed below. Where a measure has not been included in the project, the reasons for this are discussed. Any or all of the measures not included in the project could be required by the City Planning Commission to be included as conditions of approval. Measures indicated with an asterisk (*) were adopted as part of the project in the Final Initial Study (see Appendix A, pages A-3 to A-30).

Some of the measures described below are required by law or regulation. The project could not proceed without incorporating these measures, whether or not they are included as conditions of approval. These requirements would be enforced and monitored by the appropriate public agency, as described in the measures.

Because the EIR is developed early in the project review process, some of the mitigation measures and monitoring measures described below are conceptual in nature. They will be specified more precisely when and if the project and particular conditions of approval are considered by the decision-makers. Mitigation measures that consist of design features and construction practices are implemented and monitored as part of the building permit process.

TRANSPORTATION

This section discusses transportation mitigation measures which are included in the project, and measures which are not included in the project but could be proposed by the Department of City Planning and the Department of Public Works to address both project-related impacts and areawide transportation problems. An expanded discussion of these transportation mitigation measures is available in the Underwater World Aquarium at Pier 39 Traffic and Transportation Study.

MEASURES PROPOSED TO BE INCLUDED IN THE PROJECT

- Time-specific admission tickets would be required to control the visitor flow at a level commensurate with the capacity of the proposed aquarium. The project could not physically accommodate more than 900 visitors per hour. However, the projected attendance demand could be much greater than 900 hourly visitors. Uncontrolled admissions would result in negative transportation impacts in the study area such as

level of service "F" traffic flows and parking demand in excess of supply. The transportation analysis in this document assumes that this mitigation measure would be included in the project until such time that demand falls below the 900 hourly maximum capacity used throughout this study as the basis for analysis of transportation impacts. In future years attendance demand would be expected to stabilize at a level lower than the initial demand. If demand falls below 900 hourly visitors, tickets could be sold at the door up to the 900 per hour maximum in the future without additional negative transportation impacts. The project sponsor would submit periodic reports to the Department of City Planning disclosing actual attendance figures and admissions practices.

- The project sponsor would increase the capacity of the Pier 39 garage by 100 to 120 spaces by restriping to increase the number of compact stalls (18 spaces), reconfiguring the layout of existing stalls (22 spaces), and increasing valet operations in the garage (60 to 80 additional valet spaces beyond the number of valet spaces used today during peak summer weekends). Before the issuance of occupancy permits for the project, the project sponsor would submit a report to the Department of City Planning showing that the required alterations to the garage have been carried out.

- The project sponsor would cause 400 parking spaces to be opened to the public on weekends in order to accommodate additional demand generated by the Underwater World project at the AMPCO parking garage at 80 Francisco Street. Signage would be placed near queuing lines along The Embarcadero and traffic/parking control personnel would help redirect people to the parking garage at 80 Francisco Street.

- Alternatively, the sponsor could make similar arrangements at another existing facility in Levi's Plaza or the area generally north of Vallejo Street and east of Telegraph Hill. This redirection of traffic reduces impacts on Kearny Street but increases impacts along North Point Street during certain peak periods. The levels of service at two study intersections would be slightly affected compared to the conditions with an 80 Francisco remote garage. Additional traffic on North Point Street would impact the North Point/Embarcadero intersection, and less traffic on Kearny would improve conditions at Kearny/Bay compared to the 80 Francisco plan. Table 17 includes this evaluation of both CAC alternatives with remote parking in the Levi's Plaza area.

- The diverted traffic to remote parking, at its peak, would amount to about 85 to 100 vehicles in the peak hour on weekends. This traffic would head south passing through the intersections of Embarcadero/Sansome and Embarcadero/Battery. During weekend peak hour conditions, these intersections operate at levels of service B to C, handling over 1,500 vehicles in the southbound direction. The diverted traffic would amount to at most a 6 percent change in southbound traffic and would not significantly impact the operations at these intersections. In the event that another remote parking facility were designated in the geographic area north of Vallejo Street and east of Telegraph Hill, no other area intersections could potentially show significant adverse traffic impacts due to the volume of traffic that may be added.

- Before the issuance of occupancy permits for the project, the project sponsor would submit a report to the Department of City Planning showing that the sponsor has entered into a lease for twenty years with the owners of the garage at 80 Francisco Street or an alternative garage.

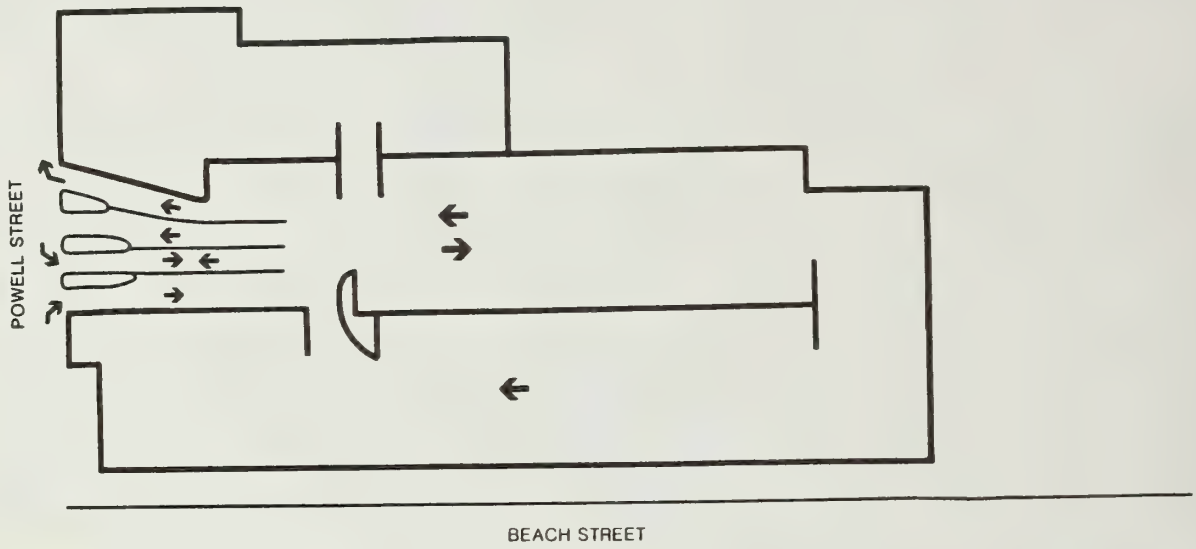
o The project sponsor would modify the existing Pier 39 garage to provide a second garage access point at the Stockton/Beach intersection and by recessing control gates, which would provide additional off-street stacking area, improve circulation in the project vicinity, and reduce congestion at the Powell/Jefferson/Embarcadero intersection (one of the garage circulation alternatives studied would provide a third access, also on Beach Street). Several potential internal configurations for a second garage access at Stockton/Beach were evaluated as part of this analysis, which were narrowed to five schemes as shown in Figure 31 A-C, pages 137 to 139. These five internal garage circulation schemes, in combination with the five external schemes described below, were evaluated based on several criteria, including garage access, on-street parking impacts, pedestrian circulation and safety, off-street stacking capacity, conflicts with the planned MUNI F-Market line, accessibility to remote parking areas, effects on the through traffic capacity of The Embarcadero, and the intersection level of service impacts.

Three potential alignments of the planned F-line were also analyzed for this study in combination with five external schemes for circulation in and around the Pier 39 garage. The geometric configurations of these five external circulation schemes in the immediate vicinity of the Pier 39 garage are shown below in Figure 32, page 140. These eight criteria for evaluation are based on comparisons of the five schemes to existing conditions and are discussed further below. Figure 33, page 141, compares each garage circulation scheme based on the first seven criteria in tabular form.

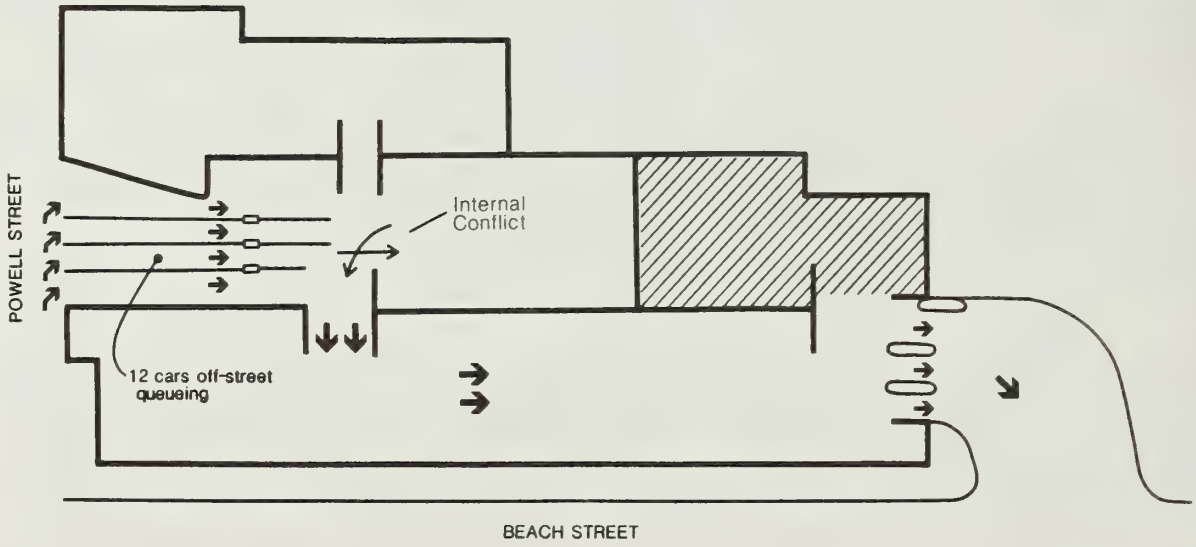
Garage Access. Scores were higher for access schemes which would be simple to understand, without unusual traffic conditions such as counterflow lanes with left turn access to the garage from The Embarcadero at Powell Street (Schemes 1, 3, and 4). Schemes 2 and 5 would retain the counterflow lane into the garage.

PIER 39 GARAGE INTERNAL CIRCULATION SCHEME

FIGURE 31A



EXISTING SCHEME



SCHEME 1

LEGEND

- Ticket Gate
- Payment Gate
- Area Requiring Lot Attendant Monitoring

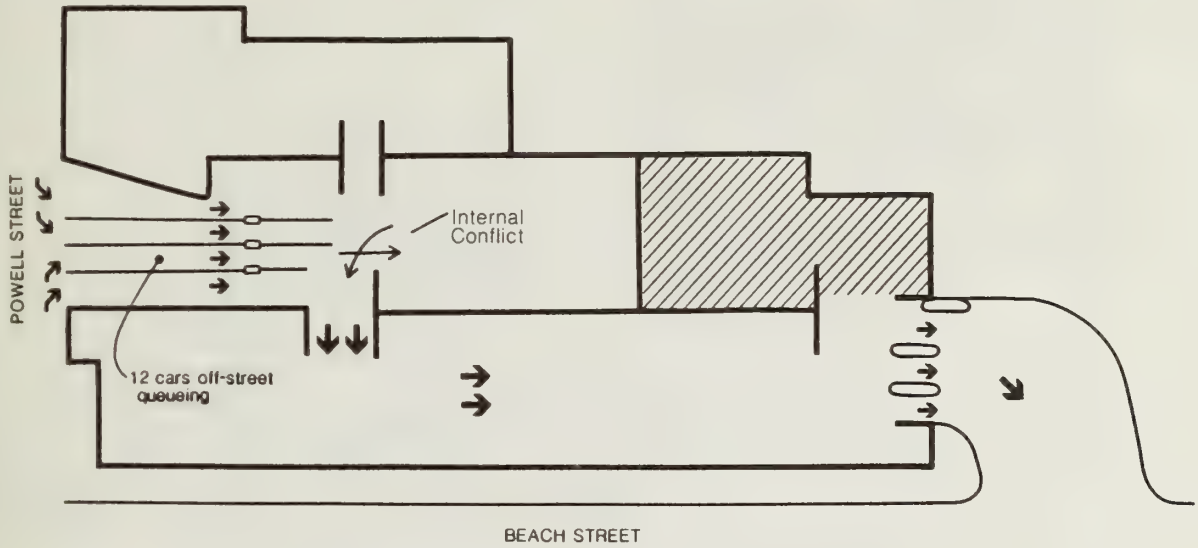
SOURCE: DKS ASSOCIATES

86137

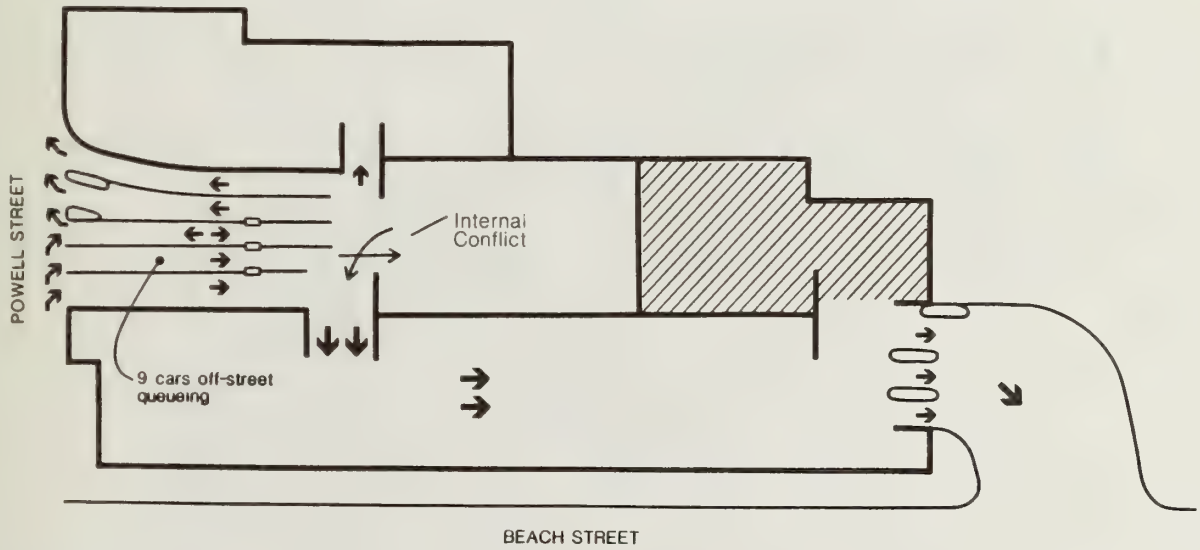
eip

PIER 39 GARAGE INTERNAL CIRCULATION SCHEME

FIGURE 31B



SCHEME 2



SCHEME 3

LEGEND

- Ticket Gate
- Payment Gate
- Area Requiring Lot Attendant Monitoring

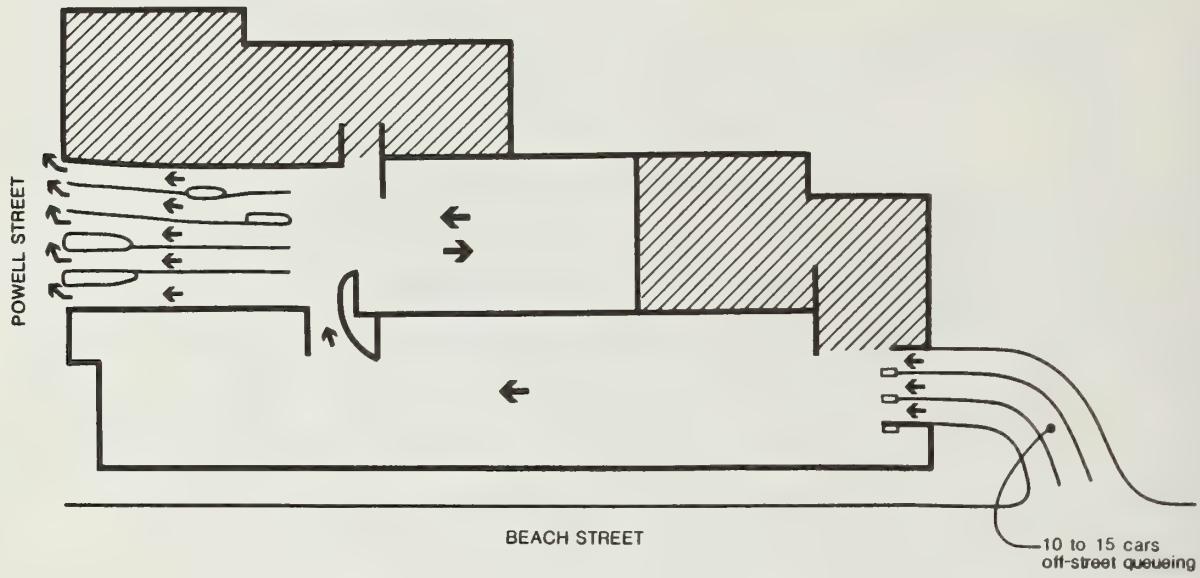
SOURCE: DKS ASSOCIATES

86137

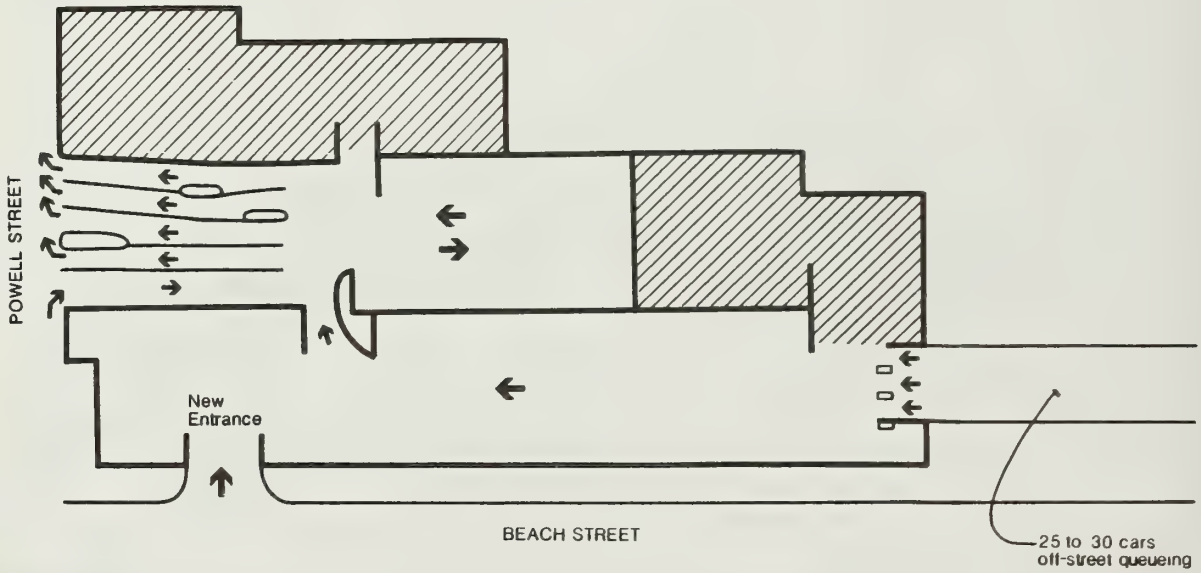
eip

PIER 39 GARAGE INTERNAL CIRCULATION SCHEME

FIGURE 31C



SCHEME 4



SCHEME 5

LEGEND

- Ticket Gate
- Payment Gate
- Area Requiring Lot Attendant Monitoring

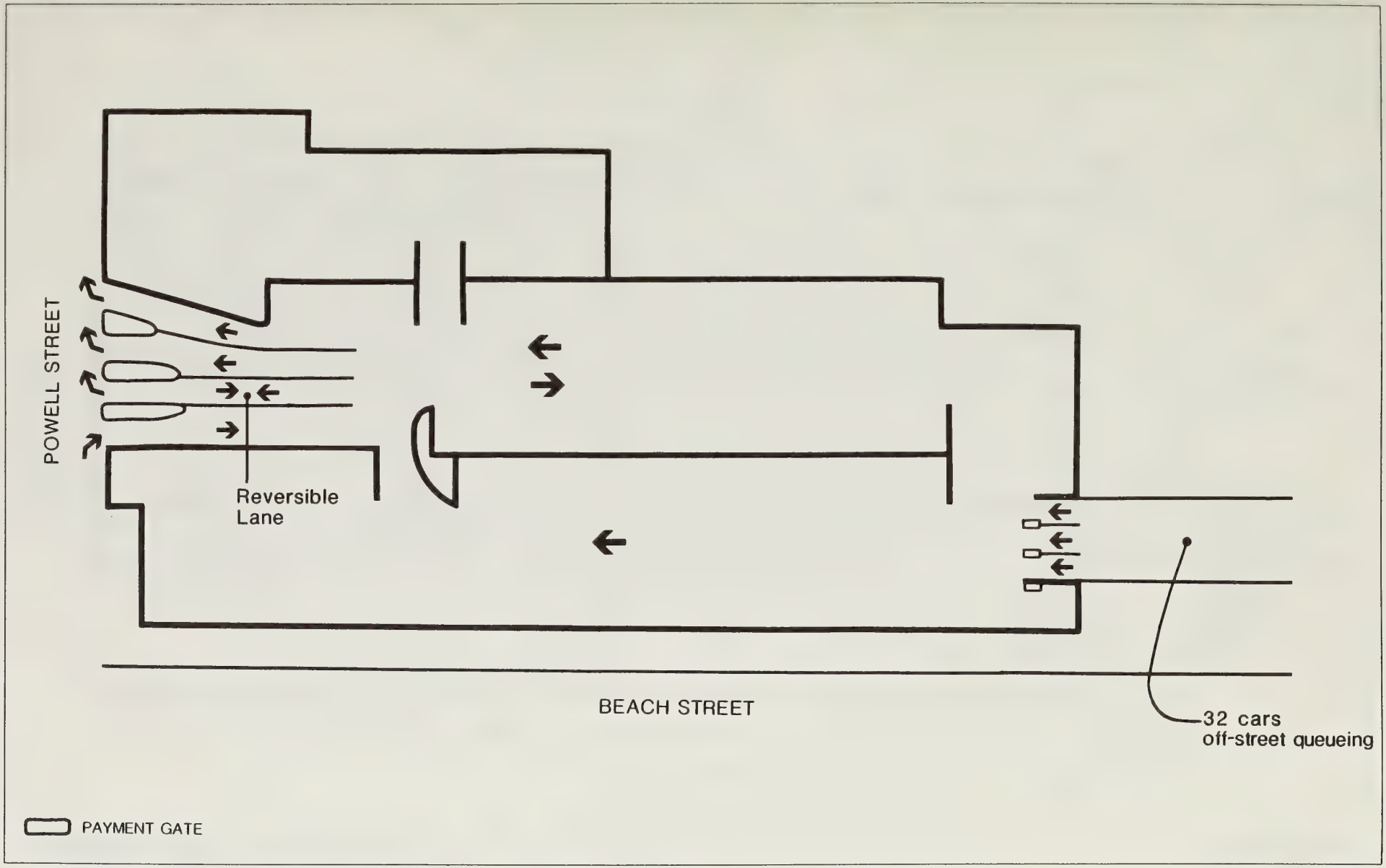
SOURCE: DKS ASSOCIATES

86137

eip

● PIER 39 GARAGE EXTERNAL CIRCULATION STAFF/SPONSOR PREFERRED ALTERNATIVE

FIGURE 31D



SOURCE: DKS ASSOCIATES

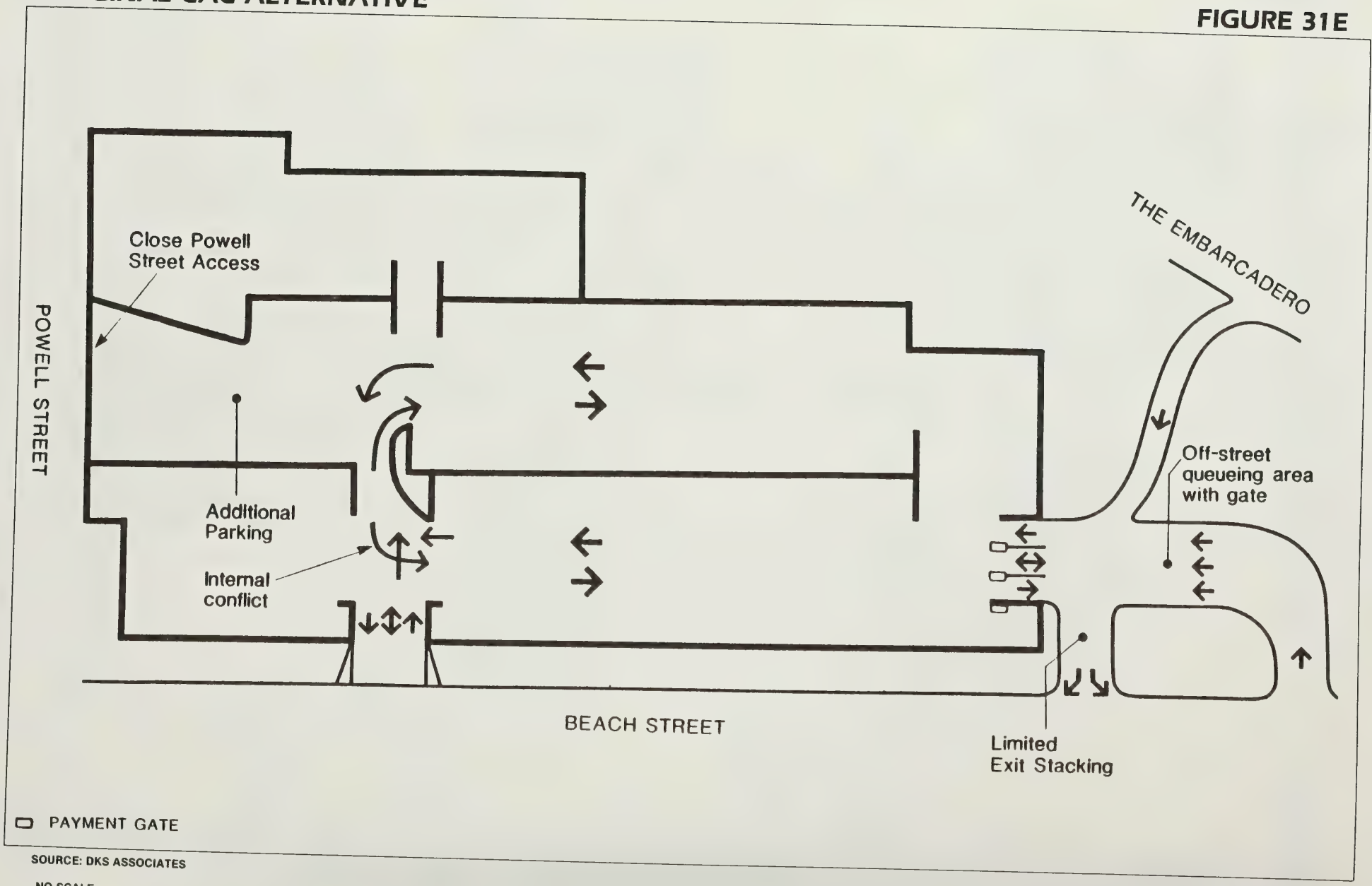
NO SCALE N

86137

eip

PIER 39 GARAGE GROUND FLOOR CIRCULATION
ORIGINAL CAC ALTERNATIVE

FIGURE 31E



SOURCE: DKS ASSOCIATES

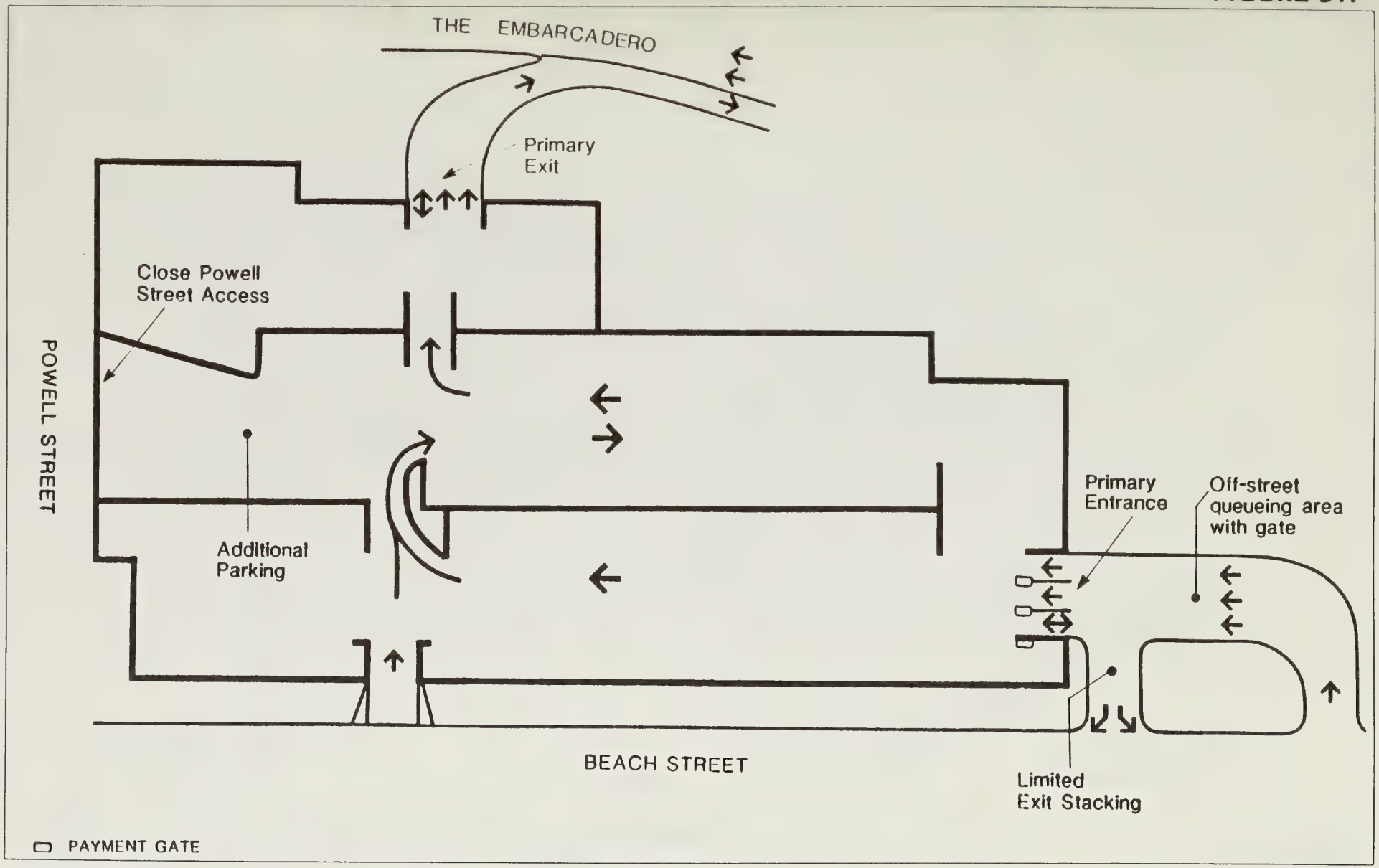
NO SCALE

86137

eip

PIER 39 GARAGE GROUND FLOOR CIRCULATION
REVISED CAC ALTERNATIVE

FIGURE 31F



SOURCE: DKS ASSOCIATES

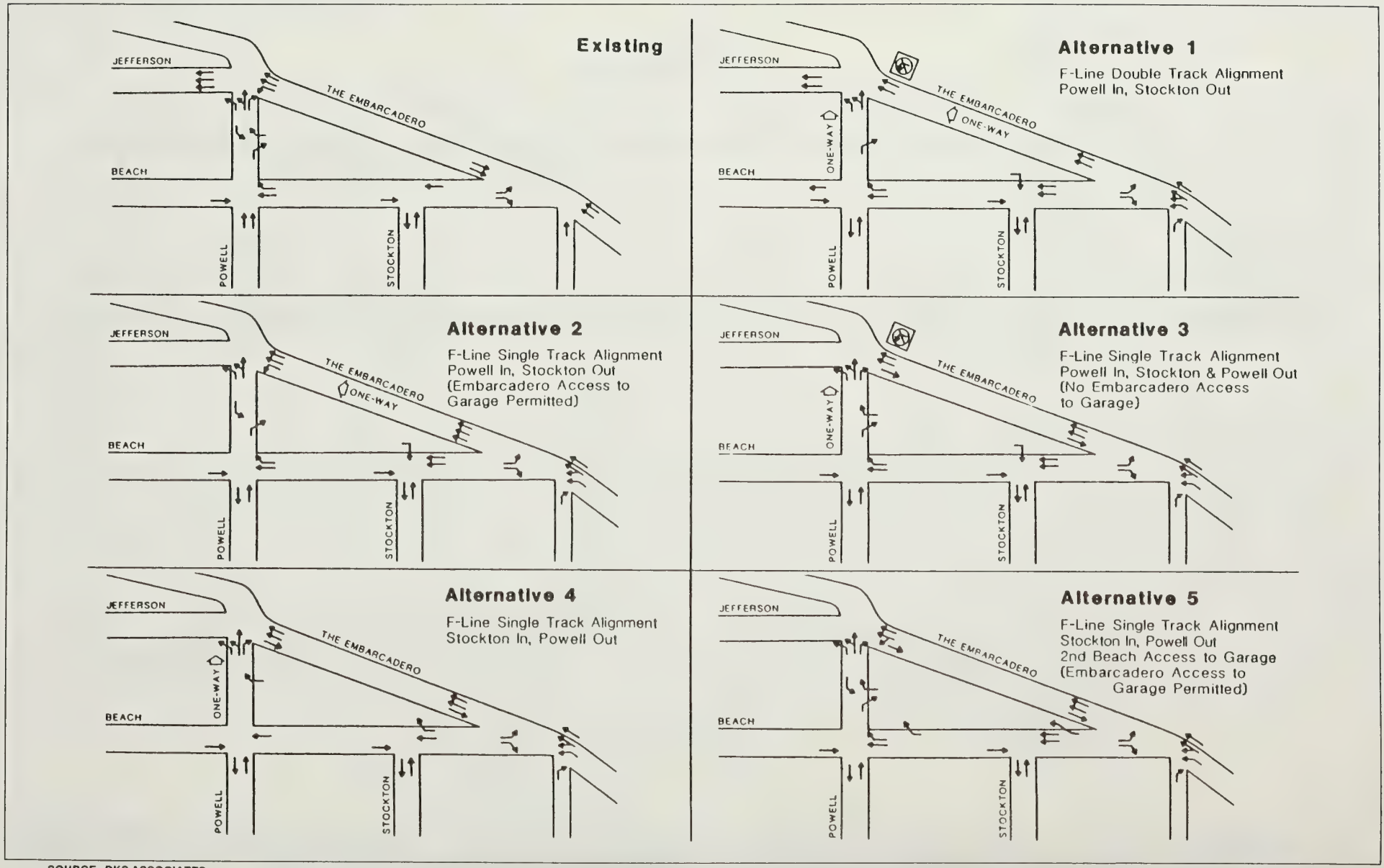
NO SCALE

86137

eip

PIER 39 EXTERNAL GARAGE CIRCULATION SCHEME

FIGURE 32



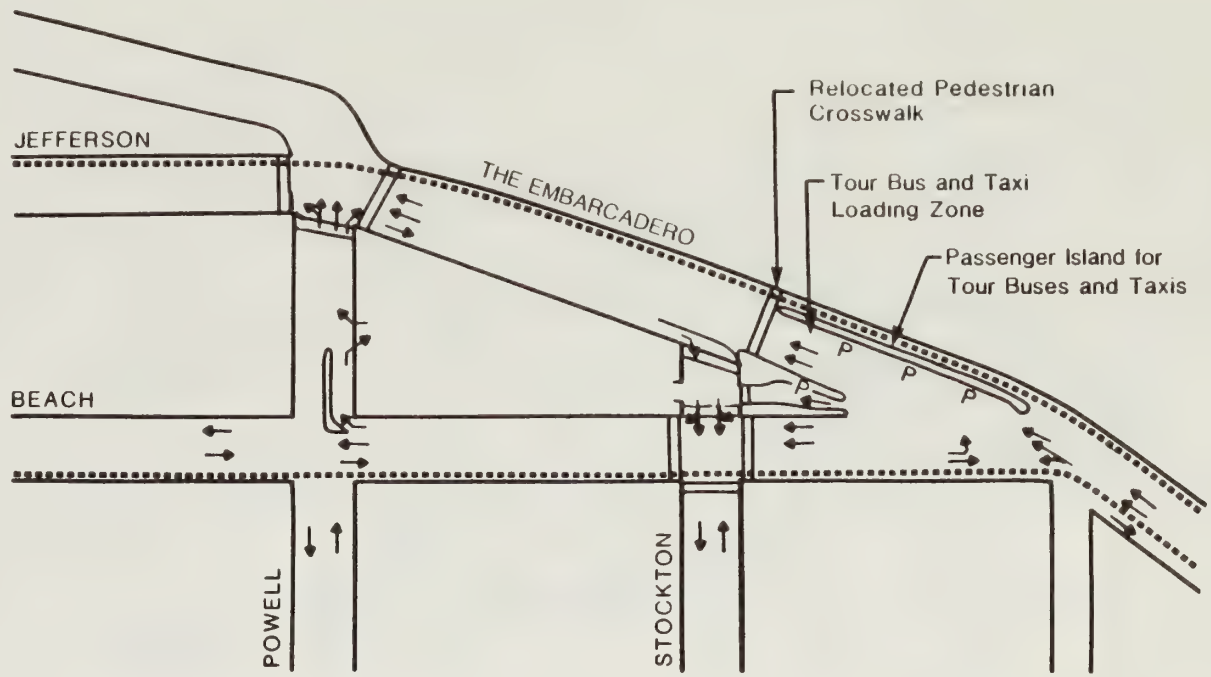
SOURCE: DKS ASSOCIATES

86137

eip

● PIER 39 GARAGE GROUND FLOOR CIRCULATION STAFF/SPONSOR PREFERRED ALTERNATIVE

FIGURE 32A



Planned Muni F-Line Alignment
P Passenger Loading Zone
Pedestrian Crosswalk

SOURCE: DKS ASSOCIATES

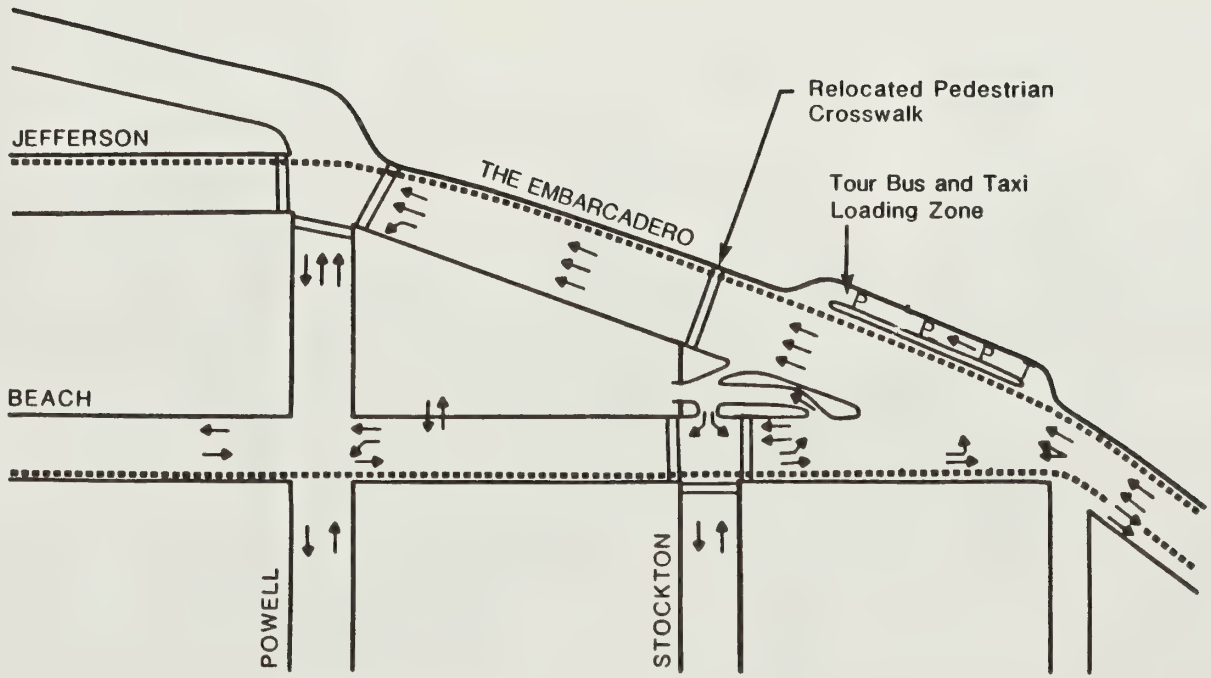
NO SCALE N

86137

eip

PIER 39 GARAGE ORIGINAL CAC ALTERNATIVE EXTERNAL CIRCULATION SCHEME

FIGURE 32B



Planned Muni F-Line Allignment
P Passenger Loading Zone
T Truck Access
Pedestrian Crosswalk

SOURCE: DKS ASSOCIATES

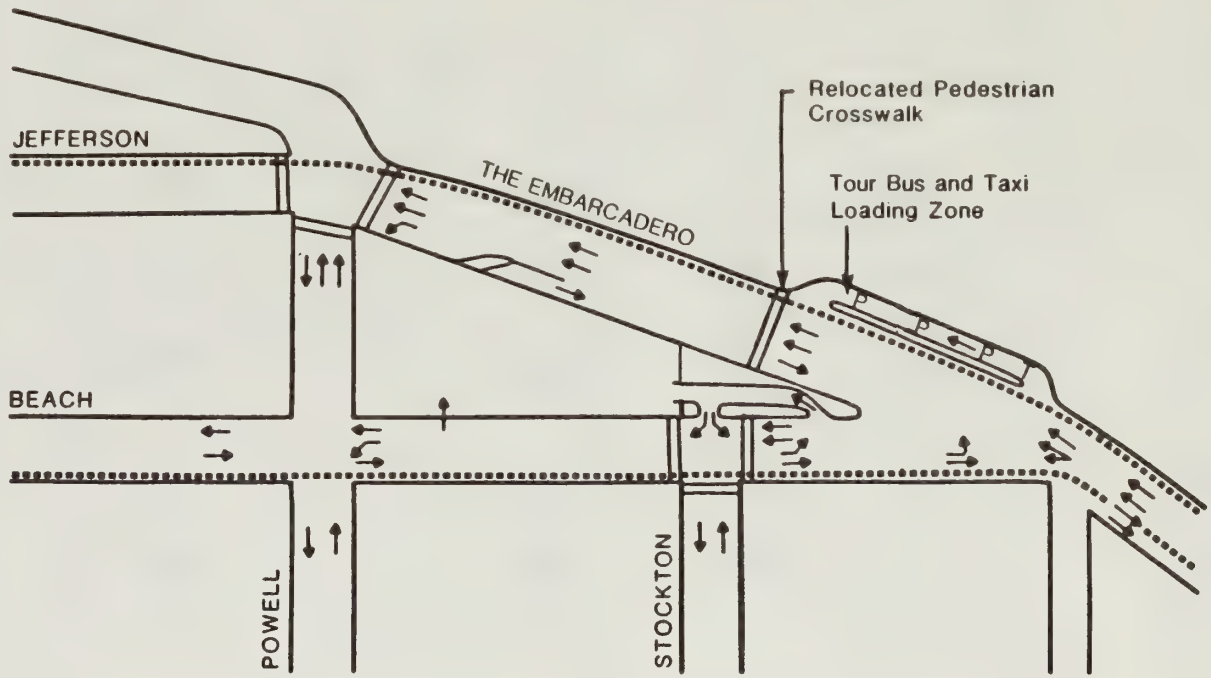
NO SCALE

86137

eip

PIER 39 GARAGE REVISED CAC ALTERNATIVE EXTERNAL CIRCULATION SCHEME

FIGURE 32C



Planned Muni F-Line Allignment
P Passenger Loading Zone
T Truck Access
Pedestrian Crosswalk

SOURCE: DKS ASSOCIATES

NO SCALE

86137

eip

CRITERIA COMPARISION OF PIER 39 EXTERNAL GARAGE CIRCULATION SCHEME

FIGURE 33

CRITERIA \ CIRCULATION ALTERNATIVE	1	2	3	4	5
1. Garage Access	●	⊖	●	●	◍
2. On-Street Parking	○	○	○	⊖	○
3. Pedestrian Circulation/ Safety	●	○	◍	◍	○
4. Off-Street Garage Stacking	◍	◍	◍	●	●
5. Traffic/F-Line Conflicts	●	◍	◍	○	⊖
6. Access to Remote Parking	⊖	⊖	◍	◍	◍
7. Embarcadero Through Lane Capacity	⊖	⊖	⊖	⊖	○

KEY

- ● Better than Existing
- ◍ Moderate Improvement over Existing
- ⊖ No Change over Existing
- ○ Worse than Existing

Note: Refer to Figures 30A, 30B, 30C and 31.

SOURCE: DKS ASSOCIATES

86137

eip

On-Street Parking. All on-street parking on Beach Street between The Embarcadero and Powell Street would be removed under the four schemes with a Powell Street entrance. Much of this parking is currently used by MUNI buses and tour buses at the Kirkland bus yard, but in the future could be used to provide additional on-street parking. Scheme 4 would remove on-street parking on Beach Street between Stockton Street and The Embarcadero. This loss of approximately nine spaces would be offset by retaining on-street parking along Beach Street in the area currently occupied by MUNI buses.

Pedestrian Circulation/Safety. In general, one-way streets provide safer conditions for pedestrian circulation. Particular importance is placed on the intersection of Powell/Jefferson/The Embarcadero, which carries high volumes of pedestrian traffic. Under Schemes 1, both Powell Street and The Embarcadero would be one-way streets, which would be optimal for pedestrians. Powell Street would also be one-way in Schemes 3 and 4. Alternative 5 would not eliminate any one-way segments. Additionally, the number of garage access points introduces conflicts with pedestrians (i.e. more driveways with multiple movements, such as with Scheme 5, is worse than fewer driveways with simple movements).

Off-Street Garage Stacking. This criterion was evaluated based on the amount of off-street storage provided. All schemes would provide more off-street queuing than the existing garage circulation, with Schemes 4 and 5 providing the most additional off-street capacity.

Traffic/F-Line Conflicts. A double-track F-Line configuration (Scheme 1) would provide the fewest conflicts between traffic and the trolley line. A traffic signal at Stockton/Beach would minimize conflicts between the F-line and outbound garage traffic under Schemes 2 and 3. Schemes 4 and 5 could potentially conflict with the F-line if queues on Stockton Street extended into the F-line track.

Access to Remote Parking. This criterion was evaluated based on the ease of access to additional parking at 80 Francisco Street after arriving at the Pier 39 garage. Schemes 1 and 3 would allow drivers to turn left onto southbound Powell to Bay Street and Kearny Street, if Powell Street is converted to two-way operation between Bay and Beach as is presently proposed by the City. If Powell were to remain one-way northbound, drivers would be able to circle around the Pier 39 Garage to The Embarcadero under Scheme 3, from which the 80 Francisco Garage would be accessible via Kearny Street. Scheme 5 would provide drivers choosing the Beach Street entry with a direct route to the 80 Francisco Garage, but drivers using the Powell Street entrance could not leave the queue on Powell. The remaining schemes either would not permit cars to leave the queue once in it due to the counterflow lane on Powell Street (Schemes 2 and 5), or would direct drivers to first drive several blocks away from the 80 Francisco garage (Scheme 1).

Embarcadero Through Capacity. Alternatives 1-4 each would retain two through lanes on northbound Embarcadero between Beach and Powell Streets either by eliminating the northbound left turn access into the garage or eliminating southbound traffic. Alternative 5, would retain both the northbound left turn garage access and the southbound lane. In combination with the F-line in the northbound curb lane, this would reduce the through traffic capacity of The Embarcadero northbound.

Level of Service. The results of the intersection level of service comparison are shown in Table 17, page 143. All level of service analysis is based on the future weekend cumulative development scenario (Hotel/Retail scenario "A"), and includes

● TABLE 17

LEVEL-OF-SERVICE COMPARISON
PIER 39 EXTERNAL GARAGE CIRCULATION SCHEMES

Intersection	CIRCULATION ALTERNATIVE[1] Level-of-Service (Volume-to-Capacity Ratio) 1	2	3	4	5	Staff/Sponsor Preferred Alternative	Original CAC Alternative*	Original CAC Alternative With New Remote**	Revised CAC Alternative*	Revised CAC Alternative With New Remote**
Powell/Jefferson/ The Embarcadero	B(0.66)	C(0.75)	B(0.66)	B(0.66)	C(0.75)	A(0.56)	B(0.64)	B(0.64)	B(0.64)	B(0.64)
Powell/Beach (with existing 3-way stop)	F(1.19)	F(1.17)	F(1.18)	F(1.21)	F(1.17)	F(1.17)	F(1.21)	F(1.21)	F(1.19)	F(1.19)
Powell/Beach (with 2-phase signal)	C(0.79)	C(0.77)	D(0.80)	D(0.81)	C(0.79)	C(0.78)	D(0.85)	D(0.85)	D(0.81)	D(0.82)
Stockton/Beach (with existing N/B stop)	N/A	N/A	N/A	A/E	A/C	N/A	N/A	N/A	N/A	N/A
Stockton/Beach (with split-phase signal)	B(0.69)	B(0.69)	C(0.74)	N/A	N/A	C(0.70)	C(0.78)	C(0.78)	C(0.73)	C(0.73)
Embarcadero/Beach (with split-phase signal)	B(0.68)	B(0.68)	B(0.68)	D(0.81)	D(0.85)	B(0.68)	B(0.68)	B(0.68)	C(0.80)	C(0.80)
Embarcadero/ (with North Point split-phase signal)	D(0.83)	D(0.84)	C(0.78)	C(0.72)	C(0.75)	C(0.75)	C(0.73)	C(0.74)	C(0.73)	C(0.74)
Kearny/Bay	B(0.65)	B(0.65)	B(0.66)	B(0.65)	B(0.65)	B(0.65)	B(0.65)	B(0.62)	B(0.65)	B(0.62)
Embarcadero/Bay	C(0.77)	C(0.76)	C(0.75)	C(0.76)	C(0.75)	C(0.75)	C(0.76)	C(0.76)	C(0.76)	C(0.76)
Kearny/Francisco	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A

[1] See Figures 31, 32 and 32A for illustrations of circulation alternatives.

* Assumes that 80 Francisco is used for remote parking, comparable with all other alternatives.

** Assumes that remote parking is moved to Levi's Plaza area as recommended by the CAC and 80 Francisco is not used for remote parking.

N/A - Not Applicable

Source: DKS Associates

an estimate of the existing traffic which would occur with planner changes in signing and striping along The Embarcadero. These changes could divert traffic from northbound Embarcadero to Bay, North Point, and Beach Streets.

With traffic signals installed at Powell/Beach, Embarcadero/Beach, Embarcadero/North Point, and Stockton/Beach (in the case of Pier 39 garage traffic exiting at Stockton), acceptable levels of service could be maintained (LOS "D" or better) at all study area intersections with future development and the F-line extension.

- In April 1989, the project sponsor and Department staff proposed a garage access plan which is described as follows:

  - The existing primary ingress route via The Embarcadero with a left turn on to the counter-flow lane on Powell Street would be eliminated. A new primary entrance with three entry ticket booths would be established at the east end of the garage adjacent to Stockton Street. This new primary entrance would be accessed via a portal opening from The Embarcadero at the eastern tip of Seawall Lot 312 or from Beach Street.

  - The existing open space between Stockton and this new entry portal onto The Embarcadero would be changed to provide three garage queue lanes and a passenger loading area for a shuttle bus to the 80 Francisco Garage, with landscaping on the north and south sides of Seawall Lot 312. This area would also be designed to accommodate space for an F-line streetcar emergency turnback storage loop. Design of the new primary entrance and queueing area could also include reconfiguration of the adjacent Embarcadero with an expanded tour bus/taxi passenger loading area as described on pages C&R-128 to -129, or retention of the basic existing configuration with redesign of the Embarcadero/Beach intersection to clarify movements. The existing secondary ingress route via a left turn from The Embarcadero to Beach Street with a right turn onto Powell Street would be retained as well as a queue lane adjacent to the north curb of Beach Street east of Powell Street.

  - The existing garage exit gates onto Powell Street would be retained, but the existing concrete median on Powell Street would be modified north of the garage exit to allow all movements at the Embarcadero/Jefferson/Powell intersection, or a new Beach Street entry/exit would replace Powell Street as a secondary entry. As shown in Figure 32A, if the existing garage exit on Powell Street were maintained, the existing single southbound Embarcadero lane east of Powell Street would be terminated at Stockton Street, with this traffic diverted southbound onto Stockton Street, or could continue to the intersection of Beach/Embarcadero as it does now, with modification of the intersection to clarify movements. Under the Beach Street entry/exit variation, the single southbound lane on The Embarcadero would be eliminated, and the exit from the Pier 39 garage would be on Beach Street, with the secondary egress to Stockton. New traffic signals would be installed at the Beach/Stockton intersection and The Embarcadero/Beach intersection, and the existing traffic signal on The Embarcadero for pedestrians and its associated pedestrian crosswalk would be relocated to the east side of The Embarcadero/Stockton intersection, all at the project sponsor's expense.

The new primary garage entrance at Stockton would be supported by a series of parking directional signs along The Embarcadero as well as with an overhead sign at its portal. The overhead portal sign would include variable messages to reinforce a queue management strategy designed to ensure that no Pier 39 Garage queueing would extend on The Embarcadero. Weekend and holiday overflow parking at the 80 Francisco Garage would be accessed via Stockton, Powell, Kearny or The Embarcadero to Bay Street or Francisco Street. The queue management strategy would incorporate the following operating procedures:

Stage 1 Garage traffic would be directed to the primary entrance, with the secondary entrance also available. This condition would prevail on normal weekdays and at other times when the Pier 39 Garage is not effectively full.

Stage 2 Entry booths at the primary entrance would be closed using physical barriers when the Pier 39 Garage is effectively full (90% occupancy). The variable message sign would direct garage patrons to use Beach Street for access to the garage and other garages. The portal and Seawall Lot 312 queue area would remain open, but garage staff would direct patrons to either use Beach Street or the 80 Francisco Garage overflow parking facility.

Stage 3 If the Beach Street queue extends to Stockton Street, the variable message sign would be changed to direct motorists to the 80 Francisco Garage overflow parking facility only. Directional flyers would be distributed by garage staff which show how to reach the 80 Francisco Garage overflow parking facility.

Stage 4 If the queueing extends to the eastern edge of the Seawall Lot 312 queue area, vehicle loop detectors would activate a gate which would close access at the portal. Throughout the period during which the primary portal is closed, all garage patrons would be directed to other garages along Beach Street or the 80 Francisco Garage overflow parking facility.

Stage 5 After queues have dissipated at the primary entry as determined by vehicle loop detectors in the queue area immediately east of Stockton Street, the portal gate would be reopened but garage staff would continue to direct patrons to use either Beach Street to other garages or the 80 Francisco Garage overflow parking facility.

Stage 6 When occupancy at the Pier 39 Garage falls below 90%, the entry booths at the primary entrance would be reopened and the variable message signs would be changed to direct patrons to the primary entrance. This dynamic queue management strategy would be reactivated, as necessary, as indicated conditions recur.

- Staff/Sponsor-Preferred Alternative

Garage Access. The preferred alternative would be approached the same as Alternative Three, and would provide a clear path via The Embarcadero into the garage for drivers approaching from Downtown, the East Bay, and areas south of the City.

Leaving the garage would be circuitous for all directions of travel. Drivers would turn right out of the garage onto Powell then turn right onto the Embarcadero southbound as today, but would be routed through the queuing area for the garage to Beach Street, which would be similar to driving through a parking lot due to the short distance between conflict points. Upon reaching the proposed traffic signal at the Stockton/Beach intersection, drivers would have access to all directions of travel.

On-Street Parking. There would be no on-street parking on Powell Street between Beach Street and The Embarcadero, or on Beach Street between Powell Street and The Embarcadero. This would be similar to the other garage alternatives, and would result in loss of nine existing spaces on Beach Street. The existing area on the north curb of Beach Street between Stockton and Powell Streets would be replaced by a queuing lane for the garage.

Pedestrian Circulation/Safety. Powell Street would be one-way northbound, which would be optimal for pedestrian safety. The area at the east end of the garage would have crosswalks across the exit lane and the garage queuing area leading to a relocated signalized pedestrian crossing of The Embarcadero in front of Pier 39. The proposed main entrance would create three new crossings of pedestrian sidewalks. This would increase potential for pedestrian/vehicle conflicts. However, the pedestrian flows along the southside of The Embarcadero and northside of Beach Street are typically low which limits the potential number of pedestrian/vehicle conflicts.

Off-Street Garage Stacking. The preferred alternative would provide off-street queuing for approximately 32 vehicles at the main entrance. Additional on-street stacking would be provided along Beach Street and Powell Street. This provides the maximum amount of vehicle stacking area of any alternative. Some of the stacking area is on public streets, along Beach and Powell Streets.

Traffic/F-Line Conflicts. Details of the F-Line alignment were developed with this alternative which reduce the potential for vehicle/streetcar conflicts. The proposed traffic signals at Embarcadero/Beach and Stockton/Beach would minimize conflicts between outbound garage traffic and the planned MUNI F-Line. Exclusive lanes on The Embarcadero northbound and Beach Street eastbound would also reduce conflicts. Compared to the other alternatives, the large off-street stacking area reduces potential vehicle/streetcar conflicts at the intersection of Beach Street with The Embarcadero.

Access to Remote Parking. Under the preferred alternative operating plan, drivers could reach the remote parking at 80 Francisco three different ways after entering the queue for the garage: 1) by turning left from the main entrance queue onto Stockton Street, 2) turning left from Beach Street at Stockton Street, and 3) turning north on Powell Street, south on The Embarcadero and south on the extension of Stockton Street and passing through the garage queue. All these movements would be routed through Stockton/Beach intersection, which would be signalized.

Embarcadero Through Capacity. Adjacent to the main entrance of the garage, the preferred alternative calls for two northbound through lanes, a passenger loading lane, and the exclusive F-Line lane. This is the same capacity as currently exists for northbound Embarcadero traffic. If double parking were to occur at the project's loading area, impacts similar to those which now occur, i.e., temporary blockage of throughlanes would continue. The provision of more loading space in the project would be expected to reduce the occurence of double-parking.

This garage access plan would substantially reduce the existing open space at Seawall Lot 312. This approximatey 9,100 square foot area is described in The Northern Waterfront Findings Report as follows:

> "This triangular open space, bounded by The Embarcadero Beach, and Stockton Streets, consists of a lawn area with a few wind-swept cedar trees. A concrete walkway through the area connects Beach Street to Pier 39 via a signalized crosswalk across The Embarcadero. The open space has no recreational value but serves as a pedestrian corridor that provides visual relief from the relentless architecture of the garage."

The unpaved area would be reduced to landscaped strips along The Embarcadero and Beach Street. At the eastern end of this triangular space this landscaped strip would be eight feet wide, broadening to over 50 feet at Stockton. On Beach Street this strip would be six feet wide, broadening to about 20 feet at Stockton. Landscaping in these areas would be designed to conform to standards developed as part of the on-going Fisherman's Wharf Improvement Program.

The pedestrian route across this area would be moved to the west. The existing crosswalk and stoplight would be moved to serve this pedestrian route.

In conjuction with an extension of Mason Street to The Embarcadero and recommended changes in access for the Pier 39 Garage, the Fisherman's Wharf Transportation Plan has proposed changing the directional flow of Powell Street to southbound only between Jefferson and North Point Streets. Underwater World project sponsors have committed to support this concept and would move the secondary entrance to the Pier 39 Garage onto Beach Street and would have all Pier 39 Garage egress traffic turn left on Powell Street in conjunction with implementation of Powell Street for southbound travel only. If changing Powell Street to southbound operation is part of the recommended Fisherman's Wharf Transportation Plan, it will be evaluated in the EIR on that project.

Since the preparation of the Summary of Comments and Responses, additional work has been done by staff, the Citizens Advisory Committee, and the sponsor on the proposed garage circulation scheme. The CAC developed an alternative garage circulation scheme in late June, and a revised CAC scheme was presented at a CAC meeting on July 5 and was presented to the Commission on July 6. An analysis of these two different approaches to improving garage circulation is added to the EIR as follows:

Original CAC Alternative

The Original CAC Alternative (shown in Figures 31E and 32B) differs from the Staff/Sponsor-Preferred Alternative in the following ways:

No south/eastbound traffic is provided on The Embarcadero between Powell and Beach Streets;

Powell Street is two-way between Jefferson and Beach Streets;

Left turns are allowed from westbound The Embarcadero to southbound Powell Street;

The Embarcadero is one-way west/northbound from Beach to Powell Street;

No garage access is permitted on Powell Street;

A garage access point is provided on Beach Street just east of Powell;

Off-peak access to the garage from the Embarcadero to the new Stockton access point would be provided east of the relocated crosswalk. The access would be closed between 11 a.m. and 6 p.m. for all weekend days and holidays;

Both garage access points (on Beach and at Stockton) allow both ins and outs; and

The access for the new Stockton inbound garage stacking area has been relocated just west of the Beach/Embarcadero intersection.

The criteria used in reviewing circulation alternatives was studied for the CAC Alternative and is summarized below.

Level of Service: Table 17 of the EIR (also shown in the Comments and Responses document on page C&R 159) has been amended to reflect future levels of service under the original CAC Alternative. The table reflects cumulative weekend p.m. peak-hour conditions. Traffic conditions at Powell/Beach and Stockton/Beach are all worse with the original CAC Alternative than any of the alternatives studied. The primary traffic problems are caused by concentration of traffic at the Beach/Powell intersection, since Beach provides the only eastbound lane from the waterfront area. Concentration of all garage access is onto Beach Street without any use of The Embarcadero for existing traffic.

Garage Access: Ingress to the Pier 39 garage would be focused on Beach Street; however, access from The Embarcadero is being added during non-peak hours. Vehicles could access the garage from three different points, but only one location would have adequate off-street stacking. The multiple ingress points would create confusion for drivers, resulting in on-street queueing during peak conditions if manual traffic control is not utilized. Egress from the garage would also be focused on Beach Street. During non-peak conditions, this would provide a direct route to The Embarcadero or other streets away from the Northern Waterfront. However, during peak conditions, Beach Street would become more congested, resulting in vehicle delays. Auto queues generated with these delays would be compounded due to the multiple parking access driveways on Beach Street with the proposed circulation changes. This queueing would not occur to the same extent with schemes which provide an additional egress route via The Embarcadero (as is provided today).

On-Street Parking: As with all schemes, some on-street parking would be removed. There would be no on-street parking on Beach Street from Powell Street to The Embarcadero (nine spaces lost). Parking on Powell Street south of The Embarcadero could be added.

Pedestrian Circulation/Safety: By allowing left turns from The Embarcadero onto Powell Street, conflicts between vehicles and pedestrians are significantly increased compared to other alternatives. This conflict exists today and could increase with the original CAC Alternative. An all-walk pedestrian phase has been assumed in analysis to reduce this impact. The original CAC access plan increases pedestrian exposure to conflicts with vehicles along Beach Street due to three new crossings of the sidewalk. However, the pedestrian flows along the north side of Beach Street are typically low, which limits the number of pedestrian/vehicle conflicts.

Off-Street Garage Stacking: The off-street stacking area off Beach Street at the new Stockton access point provides more stacking area than any alternative except the Preferred Alternative presented in the Response to comments document (pages C&R 154-162). The original CAC Alternative plans to stack cars on Beach Street for access to the secondary entrance off Beach Street, which would be on public streets.

Traffic/F-Line Conflicts: The original CAC Alternative modifies the Preferred Alternative in that the exclusive F-Line lane has bee moved to the west side of the existing bus/passenger loading area. Bus and truck traffic will cross the F-Line tracks as they access the expanded passenger loading zone. The project sponsor has agreed to provide traffic control personnel to minimize the possible conflict between passenger loading zone activities and the F-Line. Concentration of traffic on Beach Street approaching The Embarcadero will increase potential conflicts between vehicles and the F-Line as the streetcar goes to mixed flow operation on The Embarcadero southbound between Beach and North Point Streets.

Access to Remote Parking: The original CAC Alternative relies on Beach Street as a key route to redirect traffic to remote parking areas. The secondary route for directing traffic to remote parking would be North Point Street. This differs from the Preferred Alternative which utilized North Point and Bay Streets via Powell and Stockton Streets.

Embarcadero Through Lane Capacity: Through lane capacity on The Embarcadero would be similar to all alternatives and comparable to current conditions, with two through lanes. By allowing left turns from The Embarcadero onto Powell Street, some queueing

would occur due to pedestrian conflicts. This would be similar to the conflict which presently occurs at Mason Street. The third lane on The Embarcadero would be used for queueing of left turning vehicles, similar to today. The greatest change in through capacity for The Embarcadero is the removal of southbound traffic which is served today by one lane.

Internal Garage Circulation: The original CAC Alternative modifies internal garage access substantially. Presently, existing vehicles proceed straight down the internal garage ramp to a wide internal stacking area exiting on Powell Street. The original CAC Alternative would require all traffic to turn left at the bottom of the internal ramp toward Beach Street where a new stacking area would need to be developed. Additionally, any traffic existing to the new Stockton Street access must cross this stacking area, resulting in internal conflicts and potential queueing in the garage. This is less desirable internal circulation than the alternatives with a Powell Street exit. Once at the Stockton Street exit, there is little space for stacking between the garage exit and Powell Street, only allowing about four vehicles to discharge at a time with the proposed signal at Stockton/Beach.

Revised CAC Alternative

The Revised CAC Alternative is similar to the original CAC Alternative described above with the following changes (see Figures 31F and 32C):

Primary exit is located on The Embarcadero east of Powell Street;

The Embarcadero is two-way from the proposed exit to Beach Street;

Garage access on Beach Street is only a secondary entrance;

The off-peak ingress to the garage from The Embarcadero would be at the new primary exit point.

Level of Service: Traffic conditions for this alternative are summarized in Table 17. Traffic operation is better or the same with the Revised CAC Alternative than the original CAC Alternative at every intersection except one. Levels of service would be comparable to the original five alternatives studied. Only the intersection of Beach/Embarcadero would not operate better with the Revised CAC Alternative compared to the original CAC Alternative. This change is due to allowing Pier 39 traffic to exit onto The Embarcadero southbound. The concentration of Pier 39 garage traffic on Beach Street would be reduced with the Revised CAC Alternative.

Garage Access: Ingress to the garage would be similar to the original CAC Alternative, except The Embarcadero "slow day" access would be moved northward to the proposed primary exit. Egress would be focused on The Embarcadero southbound, as it is today. Additionally, a secondary exit point would be provided at the proposed Stockton Street entrance. Access would be very visible to drivers, simple to understand and the exit condition would be relatively unchanged compared to today.

On-Street Parking: On-street parking would be similar to the original CAC Alternative in that all on-street parking along Beach Street from The Embarcadero to Powell Street would be removed. Parking on Powell Street from Beach Street to The Embarcadero could be added.

Pedestrian Circulation/Safety: The provision of left turns from The Embarcadero onto Powell Street conflicts with pedestrian flows, as in the original CAC Alternative. However, the Revised CAC Alternative reduces pedestrian/auto conflicts on Beach Street by eliminating the primary exit onto Beach Street and reducing the size of the Beach Street garage access point to one lane. The proposed primary garage exit onto The Embarcadero crosses a sidewalk which carries low volumes of pedestrian traffic, limiting the number of potential pedestrian/vehicle conflicts, and eliminates existing conflicts between pedestrians and Pier 39 garage egress traffic at The Embarcadero/Powell/Jefferson intersection.

Off-Street Garage Stacking: The Revised CAC Alternative is the same as the original CAC Alternative, which provides a substantial increase in stacking area compared to other alternatives and compared to existing conditions.

Traffic/F-Line Conflicts: The Revised CAC Alternative is similar to the original CAC Alternative; however, the conflicts of added egress traffic from Beach to The Embarcadero are reduced significantly with the proposed Pier 39 garage exit onto The Embarcadero.

Access to Remote Parking: Remote parking access would be the same as the original CAC Alternative.

Embarcadero Through Lane Capacity: This would effectively be the same as the original CAC Alternative, which is comparable to all other alternatives and similar to current conditions. The southbound capacity on The Embarcadero would be retained with one lane.

Internal Garage Circulation: Internal garage circulation is substantially improved over the original CAC Alternative. Major conflicts of internal traffic have been removed with entering traffic separated from existing traffic. A new internal stacking area would need to be developed for The Embarcadero exit. The problems of stacking at the Stockton/Beach exit signal would be minimized, since this would be a minor or secondary exit point. Exiting traffic circulation is only slightly less desirable than with a Powell Street exit which does not require any turn movements at the foot of the internal ramp.

Before the issuance of occupancy permits for the project, the project sponsor would submit a report to the Department of City Planning showing that the required alterations to the garage have been carried out.

- As an alternative to changes in circulation around and access to the Pier 39 garage described above, the project sponsor could enforce a policy of "waving off" drivers waiting to enter the Pier 39 garage once the garage fills on weekends, by closing the entrance to the garage (with cones, rope, or similar means) and directing drivers to additional parking west and at the 80 Francisco Street garage. The queue for the Pier 39 parking garage currently extends along The Embarcadero on weekends during

the tourist season, which impedes traffic flow and roadway capacity. Other garages in the Northern Waterfront (e.g., Ghirardelli Square and The Anchorage) do not experience on-street queuing. A "wave-off" policy would eliminate on-street queuing at the Pier 39 garage. Visitors likely would be able to reach available parking and hence the proposed project in less time if directed to the 80 Francisco Street garage or other garages to the west than if allowed to queue along The Embarcadero, which at peak times results in 10 to 20 minute delays.

Potential measures which would help to direct drivers to the additional parking at other garages or at 80 Francisco Street include modifying the existing Pier 39 garage sign at the corner of The Embarcadero/Beach, placing sandwich boards along The Embarcadero and Sansome Street directing drivers to the 80 Francisco Street garage, and supplying traffic/parking control personnel to direct people to additional parking (similar to the system used at Jack London Waterfront in Oakland). The project sponsor could post signs or use similar informational aids to direct visitors to the project site from the 80 Francisco garage. Pedestrians could be directed north on Kearny Street to North Point Street, and from there along the west side of The Embarcadero past Beach Street to the existing signalized pedestrian crossing north of Beach Street leading to Pier 39. The distance from the 80 Francisco garage to Pier 39 is approximately 1,500 feet, which is about 400 feet greater than the length of Pier 39. Before the issuance of occupancy permits for the project, the project sponsor would submit a report to the Department of City Planning describing a proposed garage management plan. This plan would be subject to periodic review and approval by the Department of City Planning.

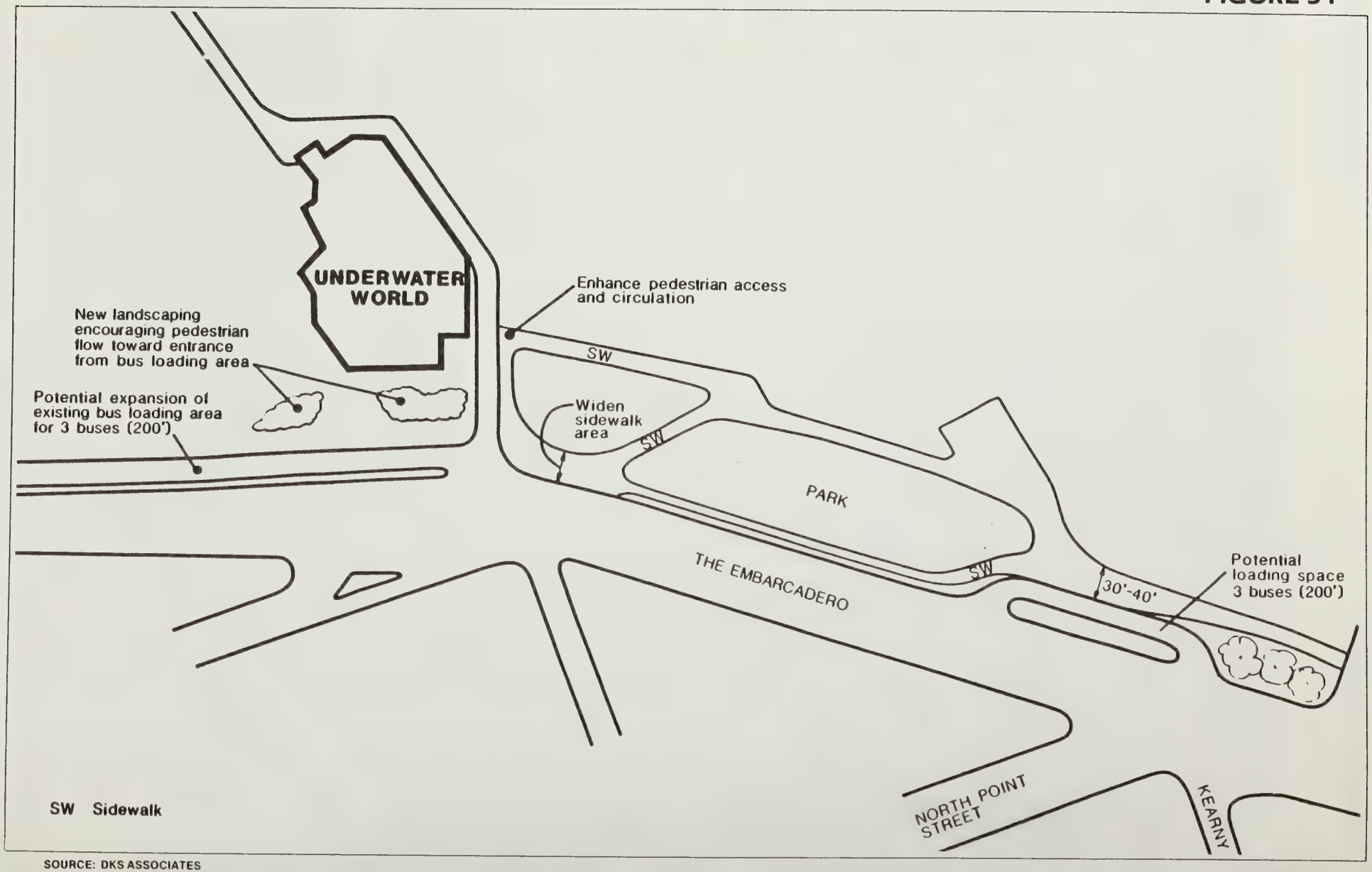
- Construction activity at the project site which could result in transportation impacts would be limited to the 9:00 AM to 3:30 PM time period to help reduce impacts on peak traffic flow.

- The project sponsor would establish an effective Transportation Systems Management (TSM) program oriented to increase visitor and employee use of transit, subject to review and approval by the Director of City Planning.

- In order to mitigate potential tour bus and passenger loading impacts, the project sponsor has agreed to implement any of the following mitigation measures which are within its control. The project sponsor could provide additional areas for bus and passenger loading. Several potential locations were considered which could provide additional loading areas (Figure 34, page 145). The existing Pier 39 bus loading area could be extended by approximately 200 feet to the west along The Embarcadero to accommodate the additional loading demand of the project. A second potential site for additional loading area would be east of the project site adjacent to The Embarcadero. This site would not be within the control of the project sponsor. A third potential site for additional bus loading space is the Powell/Jefferson/Embarcadero intersection. Several improvements could be proposed for this intersection by the Department of City Planning and Department of Public Works. As part of these improvements, additional bus loading area could be provided on The Embarcadero immediately north of the intersection. Pedicab operators who would be displaced by additional bus

POTENTIAL PEDESTRIAN AND PASSENGER LOADING SITE IMPROVEMENTS

FIGURE 34



SOURCE: DKS ASSOCIATES

NO SCALE

loading space could be relocated immediately north of their current location, where they would be favorably positioned to meet disembarking passengers. Excess parking could be removed from this area, a curbline delineated, and pedestrian circulation routes defined, which would serve to provide Wharf visitors with a sense of direction as they continue walking west from Pier 39. Piers 35 and 45 could potentially provide additional tour bus loading areas. These locations would be less desirable, however, due to greater distances from the project site and competing uses for waterfront area which would tend to make use of the Piers for additional loading space not viable. Some of these potential bus loading areas would result in a loss of open space, and some would need to be approved by the Bay Conservation and Development Commission.

- Another potential location would be in The Embarcardero. The existing tour bus area north of The Embarcadero could be removed and the area converted to open space. The position of The Embarcadero would be shifted to the south into a portion of Seawall Lot 312. Between Beach and Stockton Streets, the new cross-section of The Embarcadero from north to south would be as follows:

  - 13 feet exclusive F-line right of way;
  - 8 feet raised passenger island for tour buses and taxis;
  - 10 feet dwell lane to be used by tour buses and taxis for delivery and pickup of passengers;
  - two 11-foot northbound travel lanes.

- With this plan, tour buses and taxis would continue to approach Pier 39 northbound on The Embarcadero and, after completing passenger alighting or boarding activities at the new and expanded passenger loading area, would proceed along The Embarcadero. Tour buses and taxis would not cross the exclusive F-line streetcar right-of-way situated at the north curb of The Embarcadero. The realigned Embarcadero would preserve the same level of accessibility to other Fisherman's Wharf businesses which presently exists. This plan would require actions by the Department of Public Works as well as by the project sponsor.

- Before the issuance of occupancy permits for the project, the sponsor would submit a report to the Department of City Planning showing that the implementation of the mitigation measure imposed by the City Planning Commission was complete.

AREAWIDE MITIGATION MEASURES

- The Department of City Planning and the Department of Public Works could implement a one-way couplet system using Bay and North Point Streets to reduce traffic conflicts, improve public safety, and improve circulation in the Northern Waterfront area.

  This circulation mitigation measure was proposed and analyzed in the Northern Waterfront Traffic and Transportation Study, and in the background transportation study for this EIR. A one-way couplet could improve access to the Wharf, reduce delay, and minimize conflicts between turning and through traffic streams, as traffic turning off Bay or North Point into the study area would not face opposing traffic.

No key intersections which function as "gateways" to the Northern Waterfront would experience Level of Service "F" conditions during weekday or weekend peak-hours with one-way couplet. (These key intersections include Columbus/Bay, Embarcadero/North Point, Franklin/Bay, Van Ness/Bay and Embarcadero/Bay.) This would result in improved traffic performance with future development as compared to conditions which would be provided by the existing circulation system. The total number of intersections in the area-wide study area operating at LOS "D" or worse in the horizon year on weekdays would decrease from seven with existing circulation (including one at LOS "F") to five on weekdays, with none at "F". On weekends the number of intersections operating at LOS "D" or worse would decrease from eight with existing circulation (including four at LOS "F") to three with the couplet, including two at LOS "F."

In general, traffic conditions in the future with the Bay/North Point couplet would be similar or better than existing traffic conditions on Bay Street, with delay due only to left-turning vehicles and loading activity substantially reduced. However, while traffic would operate better on Bay Street, North Point Street would carry more traffic. Signalization of Embarcadero/North Point would be needed regardless of the future land use scenario or circulation system that is ultimately developed.

- The one-way couplet is opposed by residents at this time. However, a mitigation as effective in improving capacity, traffic operations, safety, access and circulation has yet to be evaluated. The Department of Public Works uses the couplet as the standard of comparison when evaluating other proposals for access improvements. The final decision on this measure rests with the Board of Supervisors and the Mayor.

- The Department of City Planning and Department of Public Works could propose to implement the extension of Mason Street to The Embarcadero. This improvement would decrease the volume of traffic and improve intersection operating conditions at the Powell/Jefferson/Embarcadero intersection by drawing a portion of Powell Street traffic onto Mason Street.

CONSTRUCTION NOISE

MEASURES PROPOSED TO BE INCLUDED IN THE PROJECT

- The construction contract would require that the project contractors muffle and shield intakes and exhaust, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible, so that noise would not exceed limits in the City's Noise Ordinance (Article 29, San Francisco Police Code, 1972).

- The general contractor would construct barriers around the site, and around stationary equipment such as compressors, which would reduce construction noise by as much as five dBA.

- The project sponsor would require that the construction contractors limit pile driving activity to the hours between 8:00 AM and 6:00 PM. This would require work permits from the Director of Public Works pursuant to the San Francisco Noise Ordinance Section 2907(c).

- Preconstruction surveys would be needed to establish the potential effects of vibration from pile driving. A vibration monitoring program would be maintained throughout the pile-driving phase of construction.

WATER QUALITY AND MARINE BIOLOGY

MEASURES PROPOSED TO BE INCLUDED IN THE PROJECT

- The project sponsor, prior to initiation of project construction would require the general contractor to prepare a plan for the storage of hazardous materials and for their clean-up in the event that a spill should occur.

- Only aquatic species native to Northern California Pacific and Bay Waters would be contained in the aquarium.

- In order to avoid health hazards associated with the use of ozone, the project would employ standard operating procedures for ozone production and handling, including a complete system of ozone generation, ozone destruction, and ozone monitoring.

- Backwash recirculating filters with municipal water and discharge backwash to City sewer.

- Before a discharge permit would be issued, by the Regional Water Quality Control Board, the RWQCB may require bioassays using Regional Water Quality Control Board approved test animals to determine an acceptable concentration of Dylox in the discharged effluent. These test animals include those commonly found in the Bay, some of which would probably be placed in the proposed aquarium. Dylox-treated water would then be held in the aquarium tank for sufficient time for its concentration to decline to the level determined by the Regional Water Quality Control Board as a result of these tests to be acceptable. While this is the most likely approach to assuring that harmful amounts of Dylox would not enter the Bay, other methods, such as using a charcoal filter system would also be available, and could be required by the Regional Water Quality Control Board.

CONSTRUCTION AIR QUALITY

MEASURES PROPOSED TO BE INCLUDED IN THE PROJECT

* The project sponsors would require the general contractors to maintain and operate construction equipment so as to minimize exhaust emissions of TSP and other pollutants, by such means as a prohibition of idling motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs (to reduce emissions) for equipment that would be in frequent use for much of the construction periods.

VISUAL QUALITY

MEASURES PROPOSED TO BE INCLUDED IN THE PROJECT

* In order to reduce obtrusive light or glare, the project sponsor would use no mirrored glass on the building.

HAZARDS

MEASURES PROPOSED TO BE INCLUDED IN THE PROJECT

* Evacuation and emergency response plans would be developed by the project sponsor, in consultation with the Mayor's Office of Emergency Services, to ensure coordination between the City's emergency planning activities and the project plans, and to provide for building occupants in the event of an emergency. The project plans would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance of final building permits by the Department of Public Works.

GEOLOGIC MITIGATION MEASURES

MEASURES PROPOSED TO BE INCLUDED IN THE PROJECT

- During construction, the building contractor would be required to comply with Section 2903 of the San Francisco Building Code.

- To facilitate penetration of soils with a minimum amount of noise and vibration from pile driving, the pile locations would be predrilled using hydro-jets.

- The project sponsor has obtained a site-specific soil report from a California-licensed geologic engineer and would construct the project in accordance with the recommendations of that report regarding foundation and structure. The Port Engineering Department enforces the same building codes as the Bureau of Building Inspection. Soils reports and foundations studies would be reviewed by Port Engineering staff as part of the project's building permit application.

- Preconstruction surveys would be made to establish the potential effects of vibration from pile driving. A vibration monitoring program would be maintained throughout the pile driving phase of construction.

LAND USE

MEASURES PROPOSED TO BE INCLUDED IN THE PROJECT

- In order to mitigate the loss of landscaped and nonlandscaped pedestrian open space on land and open space over water, the Project Sponsor would provide a series of improvements around the perimeter of Pier 39 to enhance the perimeter as a walking tour of the waterfront. Such improvements could include: (1) Creation of six protected pedestrian overlooks, cantilevered over water from the existing and relocated perimeter walk/roadway. These protected overlooks would include amenities such as benches, viewfinders, low level night lighting to highlight the presence of the pedestrian areas, special displays on the content of the views from the overlook and other pedestrian amenities. (2) Enhancement of pedestrian protection from vehicles at the north end of the pier by the installation of bollards. (3) Expansion of the second level deck and overlook at the end of Pier 39.

- Some or all of these proposed mitigation measures may be required as conditions of approval by the City; some or all may be required as conditions of approval by BCDC under its jurisdiction. Within 30 days after compliance with the condition is required pursuant to the mitigation measures imposed as conditions of approval, the project sponsor would submit a report to the agency imposing the condition detailing the implementation of such mitigation measures, with a copy to the other agency.

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

This chapter identifies impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the proposed project as described in Chapter V, Mitigation Measures.

- The project will have project-specific significant effects on the environment in that it will block some Bay views from public waterfront streets and open space, including The Embarcadero promenade and some sidewalks on Beach Street. The project will, in conjunction with other reasonably foreseeable development in the Northern Waterfront area, contribute to the significant effects of cumulative development in the area in that it would result in the degradation of some intersections to unacceptable Levels of Service during the weekday p.m. peak hour and during the weekend peak hour. The project sponsor has agreed to a mitigation measure, improving access to the Pier 39 garage, which could reduce this significant effect.

VII. ALTERNATIVES

This chapter consists of possible alternatives to the proposed project. For each alternative, the environmental impacts of the alternative as well as the environmental impacts of the proposed project to be avoided are identified. Finally, the project sponsor's reasons for not selecting the identified alternative is provided. Despite the project sponsor's reasons for rejecting an alternative project, the City Planning Commission could approve an alternative project if it determines that the alternative represents a more appropriate use of the site.

The following alternatives are considered: (A) No Project Alternative; (B) Different Waterfront Location Alternative; (C) Entire Project On Existing Pier 39 Alternative; (D) Non-Waterfront Location Alternative. There are two variants of the Different Waterfront Location Alternative which are analyzed. Variant One is an alternative involving construction of the project at Pier 37. Variant Two is an alternative in which the project would be constructed on the waterfront south of the San Francisco-Oakland Bay Bridge.

A. ALTERNATIVE ONE: NO PROJECT

DESCRIPTION

Under Alternative One, the proposed project would not be constructed. This alternative would involve no change to the project site as it now exists. The Pier 39 amusement facility would remain the same with the video games on the first floor. The service road and the sixteen boat slips in the Pier 39 marina to be removed for the proposed project would remain in its existing location.

IMPACTS

If the No Project Alternative were implemented, none of the impacts associated with the proposed project would occur. There would be no impacts on land use or urban design. The existing transportation, air quality, water quality, and parking occupancy conditions would remain as they are but would be impacted by cumulative development other than the proposed project. This alternative would not contribute to cumulative transportation impacts or to increased concentration of commercial recreation and visitor facilities in the area. There would be none of the construction-related impacts described for the proposed project. The environmental characteristics of this alternative would be generally as described in the Environmental Setting Sections of this report (see Chapter III, pages 28 to 69). Cumulative impacts not generated by the proposed project would continue to occur and would impact the environment in the vicinity of the project site.

REASON FOR REJECTION

The project sponsors have rejected this alternative because it would not meet their objectives as outlined in Chapter II. The project sponsors feel that the project as proposed would provide local residents and tourists a popular recreational and educational experience of the marine environment, contribute to a better understanding of marine species indigenous to the San Francisco Bay, and complement other uses in the Northern Waterfront.

B. ALTERNATIVE TWO: DIFFERENT LOCATION ALTERNATIVES

There are two variants of the Different Waterfront Location in San Francisco Alternative. Variant One is an alternative involving the construction of the aquarium at the foot of Pier 37. Variant Two analyzes the construction of the project south of the San Francisco-Oakland Bay Bridge, along the City's southern waterfront.

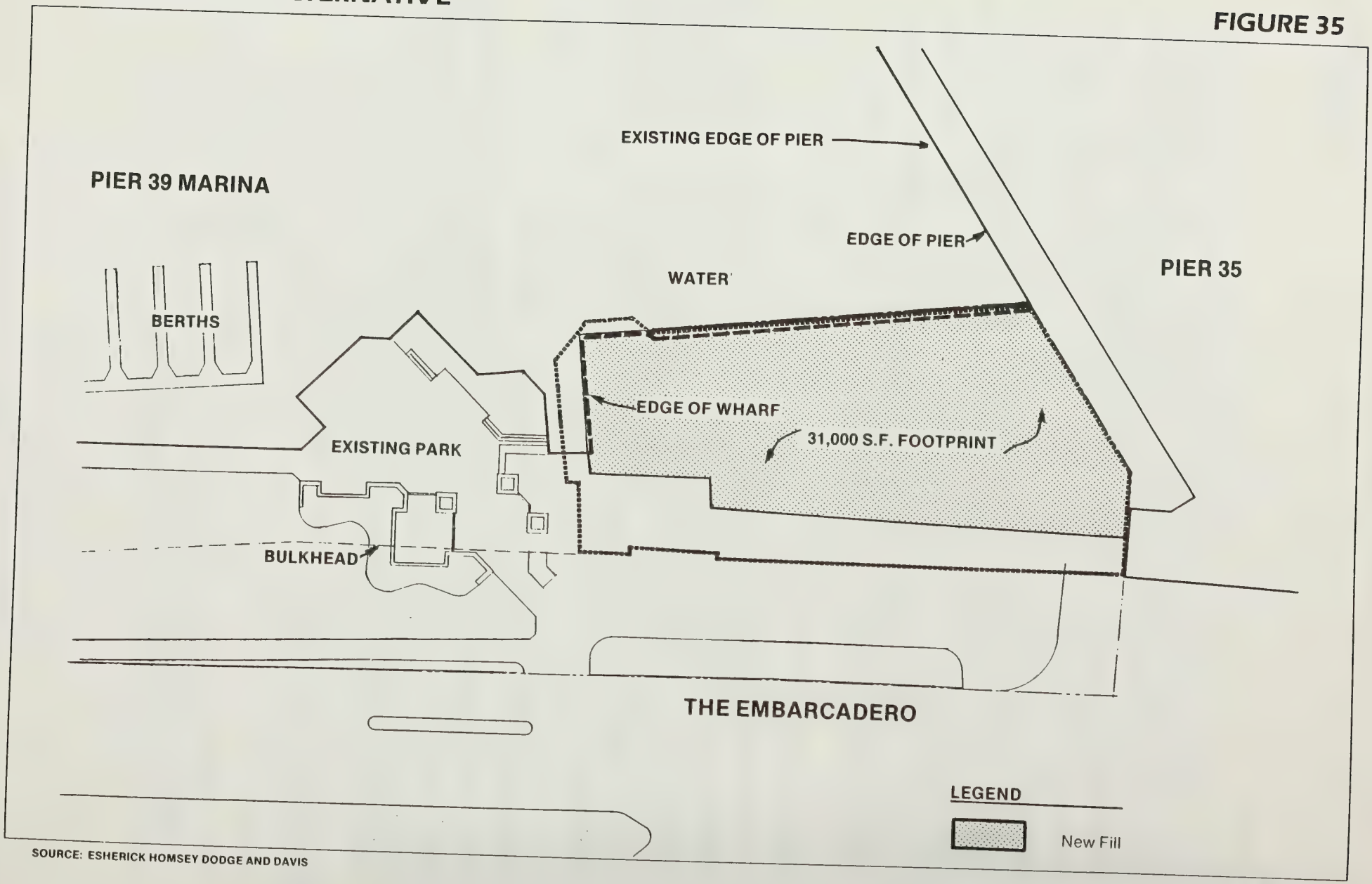
Variant One: Pier 35 West

DESCRIPTION

This variant of Alternative Two would involve the location of the proposed project immediately west of Pier 35 and east of Pier 39 (see Figure 35, page 154). The site is currently vacant with no building structures adjoining the seawall or piles in

PIER 35 WEST ALTERNATIVE

FIGURE 35



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the water. This alternative would include the same characteristics as the proposed Underwater World project with exhibit area, gift shop, and the aquarium. This alternative would be constructed to be flush with the front facade of the Pier 35 structure. The facade of the building would be typical to that of other pier entries on the Embarcadero with bold concrete facings and an arched entryway with a peaked roof of about 58 feet in height. The remainder of the building would be 36 feet in height.

Since there is no existing structure at the site, this variant of Alternative Two would be constructed on approximately 28,000 square feet of new fill in the Bay (compared to 19,400 with the proposed project), requiring more than 200 piles (compared to approximately 114 with the proposed project). The alternative would extend over 250 feet along the Embarcadero (compared to 160 feet with the proposed project).

This alternative site is part of the area which is required to be improved as public open space as part of the authorization for the development of Pier 39.

IMPACTS

Impacts associated with air quality, operating noise, water quality and marine biology and growth inducement would not change as compared to those described for the proposed project in Chapter IV, Impacts, of this document.

This alternative would be built in an area which is required to be developed as open space as a condition of approval of Pier 39. Its construction would, therefore, result in a loss of an open space resource.

In order to be constructed flush with the Pier 35 structure, this alternative would extend into the existing sidewalk area between Pier 35 and the existing pedestrian space adjacent to the Northern Waterfront Park. Impacts relating to urban design and visual quality would be greater than the proposed project, as the building would extend along the Embarcadero some 250 feet from the existing Pier 35 structure. This would result in blockage of views for 90 feet more than with the proposed project. Views of the Bay would be blocked in both directions of the Embarcadero and looking north along Kearny Street and Grant Street.

It would be expected that the same number of visitors would attend the project as proposed in this Alternative, and thus, transportation impacts associated with volume/capacity flows, vehicular-related air quality emissions, and vehicular-related noise would remain unchanged. However, impacts relating to parking and pedestrian circulation could change. Because Pier 37 is further east from the "core" of Fisherman's Wharf and slightly south, patrons would seek parking in lots close to Levi's Plaza and along Bay, Kearny and Montgomery Streets. For visitors travelling north by vehicle along the Embarcadero, this alternative would encourage an earlier diversion of traffic off Embarcadero before crossing the congested intersection of Jefferson Street, Powell Street and The Embarcadero. As a result, parking-related traffic congestion would be less than that described for the proposed project. As parking alternatives move farther to the south and east, pedestrian activity would also change as visitors walk to and from the proposed project. This would cause increased pedestrian activity at the intersections of North Point Street and The Embarcadero, and Bay Street and The Embarcadero. This latter intersection is dangerous for pedestrians because of its heavy traffic flows and irregular configuration. Under this alternative, improvements to these two intersections and possibly other intersections would be necessary in order to accommodate pedestrians. Pedestrians would be travelling to Pier 37 from the "core" area of Fisherman's Wharf and from the southeastern area of the Embarcadero (south of Bay Street). It is expected that pedestrian impacts related to this alternative would be similar to those described for the proposed project.

Because this alternative would require more than twice as many piles to be driven into the Bay than is currently proposed, impacts relating to construction noise and geology/topography would be greater than those described for the proposed project.

This alternative would require action by BCDC and the City Planning Commission to amend the existing requirement that this space be improved as public open space.

REASONS FOR REJECTION

The project sponsor has rejected this alternative because it would not meet their objectives as outlined in Chapter II. The site is not in the main thoroughfare of Fisherman's Wharf pedestrian activity (as is currently proposed) and the site would require

an increase in the number of piles to be driven (approximately 200) as compared to the number currently proposed (approximately 114). Compared to the proposed project, the project sponsor also believes that there would be greater impacts relating to land use (particularly the loss of potential open space) and visual impacts under this alternative.

In the opinion of the project sponsor, this proposed alternative would not result in any significant environmental benefit as compared to the proposed project, which would outweigh the negative impacts of the proposed alternative.

Variant 2: Aquarium Located on Pier South of San Francisco–Oakland Bay Bridge

DESCRIPTION

Variant 2 of the Different Waterfront Alternative would involve the location of the proposed project on one of the piers south of the San Francisco-Oakland Bay Bridge. Although no specific site has been identified for this alternative, according to the Port,[1] Piers 30-32, or 34, would be deemed most appropriate for this type of use because of either their vacancy or accessibility and/or potential for commercial recreation as identified in the BCDC "San Francisco Waterfront Special Area Plan."[2] For purposes of this analysis only, Pier 30-32 has been selected for environmental study and comparison as an alternative site.

Pier 30-32 is currently a vacant concrete pier that is 622 feet wide and 900 feet long (12.85 acres). Following a fire on the pier in 1984, the Port obtained environmental clearance and all necessary permits to reconstruct a maritime warehouse. However, due to funding limitations, there are no current plans to implement this project.

Under this alternative, the proposed Underwater World would be similar to the proposed project in that it would be two stories and use approximately the same site area of 25,400 square feet. This alternative would include a gift shop, tide pool, exhibits, and function room, the same as the proposed project. Because Pier 30-32 was not designed to support the heavy loads of the tanks, additional piles would need to be added to the existing pier structure. Under the project site there would be approximately 185 piles, consisting of a variety of pile systems, which would have to be removed (25,400 square feet of the

existing pier). After demolition, approximately 114 new 2 to 4-foot diameter piles would be driven into the Bay floor and a concrete base slab constructed on top of the piers.

Due to the large size of Piers 30-32, it is unlikely that the Underwater World project would be the sole occupant of the Pier 30-32 structure. It is expected that this alternative would be built on Piers 30-32 in conjunction with other commercial, recreation and/or maritime activities. This could include a hotel, a passenger ship terminal, and/or retail shops and services.

IMPACTS

Northern Waterfront Impacts

In the Northern Waterfront, there would be no impacts on land use or urban design at or near the proposed project site. The existing transportation, air quality, water quality, and parking occupancy conditions near Pier 39 would remain as they are but would be impacted by cumulative development other than the proposed project. This alternative would not contribute to cumulative transportation impacts or to increased concentration of tourism in the Fisherman's Wharf area. The number of future visitors coming to the Fisherman's Wharf area (including Pier 39) would not be affected under this alternative. Other impacts described for the Fisherman's Wharf area, which were identified for the proposed project, would not occur with this alternative.

North China Basin Area Impacts

1. Land Use

The Pier 30-32 site is located in the M-2 Heavy Industry Zoning District in which commercial recreation uses such as the proposed Underwater World Project are permitted.[3]

Pier 30-32 is situated within the North China Basin Area as described in the Northeastern Waterfront Plan. The primary objective established for this area is, "To enhance the economic vitality of the area and capitalize on its unique location and environmental attributes for both maritime and residential development."[4] The plan calls for continued

break-bulk cargo handling and related shipping activities, "for as long as practical."[5] As maritime activities decrease, the Plan calls for improvement plans to be adopted for the area in which other uses would be approved.

The Northeastern Waterfront Plan encourages continued maritime commercial activity on Piers 26 to 38. If the aquarium project were to be located on Pier 30-32, it would introduce a new type of use to the area.

The BCDC San Francisco Waterfront Special Area Plan establishes guidelines for the use of lands which are under the jurisdiction of the San Francisco Bay Conservation and Development Commission. Under this Plan permitted uses on Pier 30-32 include maritime, public recreation, open space, public access, and commercial recreation. The Special Area Plan policy for this pier states: "Replacement fill for Bay-oriented commercial recreation in the area of Piers 26 through 32 and 46a and 46b should be permitted only if these piers are no longer needed for maritime use, and only if the existing pier structures cannot be used for new uses."[6] The plan recommends mixed use for the area when existing maritime use is phased out.

Between Piers 40 through 46A, a variety of public and other uses are being encouraged in this area, such as a small boat harbor which has been constructed and a park which has been planned for Seawall Lots 333-336. Currently, three major projects are under construction in the area as part of the South Beach Redevelopment Area Project: Bayside Village is an 840 dwelling unit residential project with 16,000 square feet of commercial retail. This project is bounded by First, Bryant, Beale and Brannan Streets. Embarcadero Triangle is a mixed-used development with 65,000 square feet of commercial retail space and 177 dwelling units. This project is bounded by the Embarcadero, First and Brannan Streets. South Beach Marina Apartments is planned for 414 dwelling units and 7,000 square feet of commercial retail space. This project fronts Townsend Street and is between First and Colin P. Kelly, Jr. Streets.

2. Visual Quality

Under this alternative, the project's impacts on visual quality resulting from the blockage of Bay views could, under the worst case, be greater than those for the proposed project.

The exact extent of the impact would depend upon the configuration of the Underwater World on the pier structure. However, the significance of the Bay view blockage at the Pier 30-32 site could be considered to be lessened by the fact that the number of people exposed to the view blockage would be considerably less than at the Northern Waterfront location at Pier 39.

3. Transportation

Visitor trips generated under this alternative would be similar to that for the proposed project site. However, the traffic to Pier 30-32 would be new traffic to the area as compared to the site at Pier 39. There is no existing tourist/visitor population in that area for the aquarium to draw upon for attendance (for example, people going to Fisherman's Wharf who would also visit an aquarium at Pier 39). Without this linked trip component, all trips to a Pier 30-32 site would be new trips. With a similar sized facility, this would be approximately 16,000 person trips per day, including about 2,200 person trips during the weekday or weekend PM peak hour.

Most access for this alternative would be by auto. Based on this the potential share of auto drivers would be about 30 percent. This would represent about 4,800 daily and 660 peak hour new vehicle trips. This represents 470 percent more new auto traffic than projected for the Pier 39 site.[7] On weekends, ample traffic capacity is available in the area to serve the project. With increased residential use in the South Beach area, there could be some limited congestion in the vicinity of Bryant and Brannan Streets near the project site.

- Existing weekday PM peak hour levels of service along the Embarcadero at the intersections closest to Pier 30-32 are generally in the LOS 'A' to 'B' range. Future levels of service at these intersections (approximately 20 years following the completion of The Embarcadero roadway improvements) are projected to be LOS D. The project would add significant numbers of vehicle trips during the weekday PM peak hour to the most underused intersection approaches (to and from the Bay side of The Embarcadero), with the result that project traffic could create level of service 'E' or 'F' during the weekday PM peak hour. On weekends levels of service with the project would be significantly better (e.g., LOS 'C').

Freeway access from all three regional freeways (U.S. 101, I-80, and I-280) would be easier for the Pier 30-32 site as compared to the proposed project site, as this alternative site is in close proximity to several freeway ramps. Traffic from northbound or southbound U.S. 101 would go toward the Bay Bridge and use either of the two Bryant Street off-ramps. From northbound I-280 drivers could take the last northbound exit at Fourth Street, follow Fourth Street to Townsend Street, turn right onto eastbound Townsend Street to The Embarcadero, and from there turn left onto northbound Embarcadero where they would be two blocks from Pier 30-32. Westbound traffic on I-80 could take the Main Street exit, turn right on Market Street, right on Spear Street, and go

five blocks southbound to Pier 30-32. On-ramps to provide freeway access for vehicles leaving the Pier 30-32 site are located Harrison and Bryant Streets within 6-8 blocks of the Pier.

The parking demand would be greater at a Pier 30-32 site due to the lack of linked tourist trips and fewer transit alternatives. There are some surface parking lots in the vicinity of Pier 30-32 which are used during the week by office workers and could potentially accommodate the project on weekends through shared parking programs. However, on weekdays there is little available parking in the area which could absorb the project parking demand. The project's weekday parking impact on the area with a Pier 30-32 site would be greater than that of the proposed project at a Pier 39 site.

Pier 30-32 is not well-served by existing transit services. Local transit (MUNI) is limited to the 32-Embarcadero, which passes in front of Pier 30-32 with 12- to 15-minute headways during the week and 20-minute headways on weekends. Two other MUNI routes pass close to the site (the 80X-Gateway Express and 81X-Caltrain Express), but are express commuter lines which operate during weekday peak periods only. Based on the tourist/visitor nature of the proposed project traffic, it could not be expected that any significant portion of the project travel demand could be served with existing service at the Pier 30-32 alternative site. Comparatively, the proposed Pier 39 project site is served by several transit services. This includes eight bus routes either terminating in or passing through the Northern Waterfront area with four providing access to Pier 39 (32, 15, 42, and 39). The Powell Street-Mason Street cable car line terminates six blocks from the project site. There is also ferry terminal service to and from Marin County from Pier 43½, within walking distance of Pier 39.

The Montgomery and Embarcadero BART stations are both located within eight blocks of Pier 30-32. An Underwater World shuttle between Pier 30-32 and the BART stations could increase the site's transit accessibility. Ultimately, the extension of MUNI Metro service to the south of Market area could provide viable transit accessibility to the project. While this transit service would be effective in servicing local residents, the bulk of the tourist/visitor patrons would still be more inclined to use autos since basic public transit does not add to the tourist experience (as compared to cable cars or historic streetcars which would access the Pier 39 site). Current total transit share would be

approximately 2-3 percent of all visitors, or about 400 new person trips per day at the Pier 30-32 alternative site as compared to 15 percent of all visitors or 750 new transit person trips per day for the proposed project at the Pier 39 site. If Muni Metro Service is extended to the South of Market area, the percentage of public transit patronage would increase.

4. Other Issues

The increased travel demand associated with this alternative could result in increased impacts on vehicular-related air quality and noise impacts in the vicinity of the alternative site.

Impacts relating to air quality, water quality and marine biology, and geology/topography would be similar to those impacts related to the proposed project.

Impacts relating to construction noise could be greater or less than the proposed project depending on the number of new piles that would be needed to support the heavy loads of the aquarium tank.

Because this alternative project would introduce a commercial recreation use into an area which was traditionally maritime/industrial in use, there exists potential for growth inducement impacts greater than those described for the proposed project. This alternative, if successful, could, in conjunction with other commercial recreation development, result in a major change in overall land use patterns along the waterfront in the North China Basin Area.

REASON FOR REJECTION

The project sponsor has rejected this alternative because it would not meet their objectives as outlined in Chapter II. The project sponsor feels that the site is remote from other tourist-related areas in the city. Although the pier location would be aptly suited for a water oriented use of this type, the project sponsor believes that the surrounding mix of maritime, residential and recreational uses would not be conducive to the success of commercial recreation of this type. The project sponsor also believes that there is a lack of transit facilities necessary to support the project.

C. ALTERNATIVE THREE: ENTIRE PROJECT ON EXISTING PIER 39

DESCRIPTION

Under this alternative, the project would be constructed on the existing apron of Pier 39 and would not extend the existing Pier 39 into the existing marina (see Figure 36, page 164). The service road around Pier 39 would not change and the sixteen boat slips in the Pier 39 marina, to be removed with the proposed project, would not be demolished. Approximately 25,400 square feet of existing building footprint would be demolished (compared to the 3,600 square feet that would be demolished with the proposed project). Under this alternative, up to 40,000 square feet of existing retail use would be removed, possibly including the theatre on the second floor of Pier 39 adjacent to the proposed aquarium site, as compared to the proposed project plan which would result in the removal of approximately 3,600 sq.ft. of existing space.

The design would be more condensed, resulting in the possible deletion of some of the facilities associated with the proposed project such as the upper level terrace and the educational function room. Access to the proposed project would be from the west side of the project site, near the entrance to the existing arcade and stairway to the "San Francisco Experience" theatre. The design of the large tank, tide pool, gift shop and exhibit area would remain unchanged in this alternative.

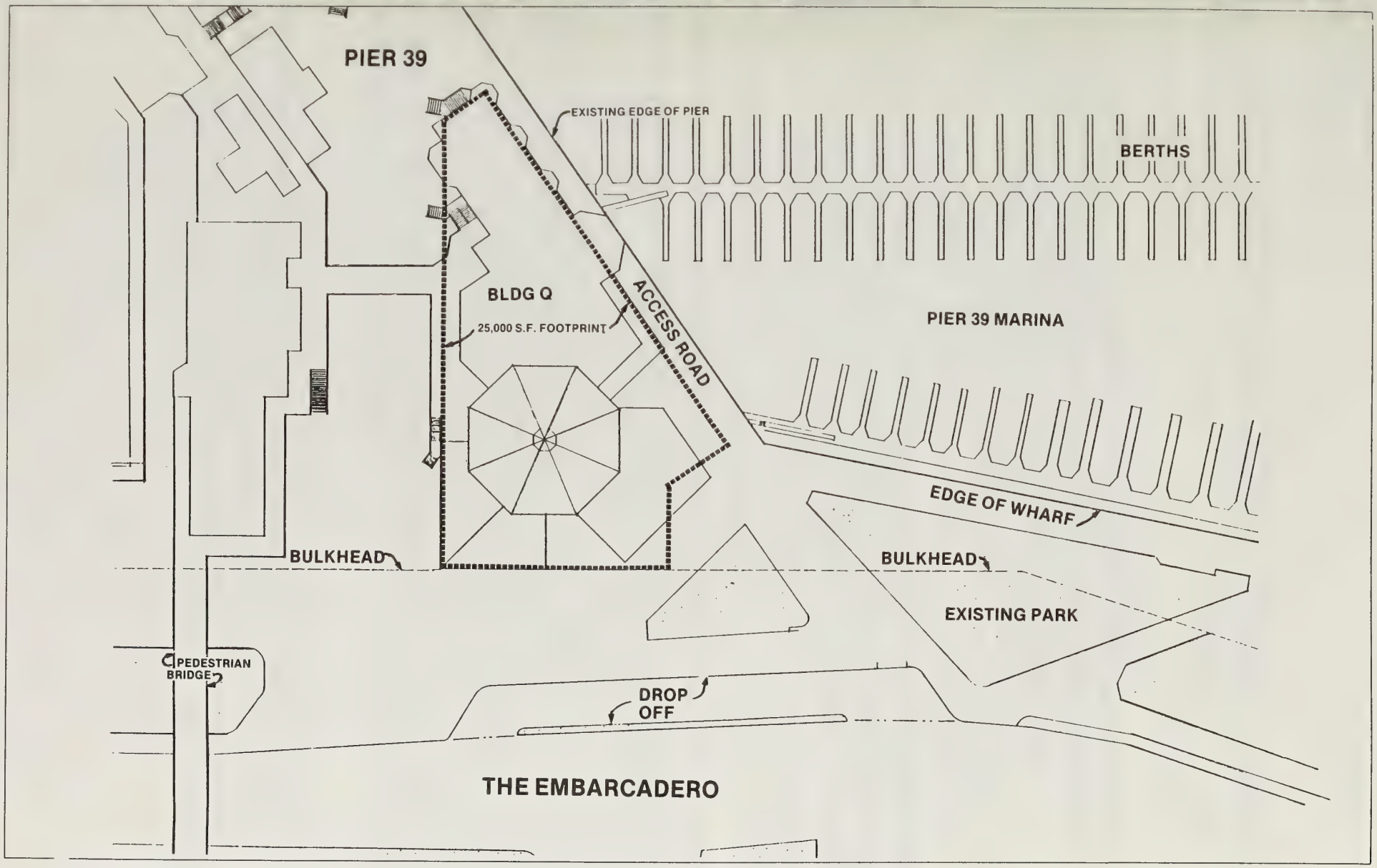
Because Pier 39 was not designed to accommodate the heavy, concentrated horizontal and vertical load of the tanks, additional piles would need to be added to the existing pier structure. A new type of pile would have to be used which would have greater reinforcement characteristics to withstand the heavy weight of the large aquarium tanks. Under the project site approximately 220 piles would have to be removed (22,000 square feet of the existing pier) and the pier deck under the site, which consists of a 5-inch base of concrete and wood beams and girders, would also have to be removed. After demolition, approximately 114 new 1-1/2 to 4-foot diameter piles would be driven along with a 36-inch concrete base slab constructed over top.

IMPACT

Under this alternative, approximately 25,400 square feet of existing occupied building space would be replaced, causing disruption to existing businesses, as compared to

NO NEW FILL/ENTIRE PROJECT ON EXISTING PIER 39 ALTERNATIVE

FIGURE 36



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replacement of 3,500 sq.ft. with the proposed project. The land uses on Pier 39 would continue to be a mixture of retail and commercial recreation, the same as with the proposed project.

Although the massing of the building in this alternative could be larger, the impact on urban design and visual quality could be less, as the aquarium would not extend south into the marina and block Bay views from the Northern Waterfront Park and the Embarcadero which are currently available, as compared to the additional view blockage described for the proposed project.

During construction, there would be greater impacts on air quality and noise due to greater amounts of demolition. Because portions of Pier 39 would have to be structurally upgraded to support the increased load factors due to the aquarium, noise impacts associated with pile-driving would also occur, similar to those described for the proposed project.

Pedestrian access and circulation would be more congested at the southern end of Pier 39 as access to and from the project would be on the western side of the project site, in the main entry-way to the entire Pier 39 development.

Because existing buildings on Pier 39 would be demolished (approximately 25,000 square feet), there would be a decrease in retail space on the project site. As a result, the net new trip generation from the project would decrease, but impacts relating to intersection level of service, V/C ratios, vehicular-related air quality emissions and noise would not be noticeably different from those described for the proposed project. Parking demand and pedestrian activity would also be essentially the same as that described for the proposed project.

Construction impacts relating to water quality and marine biology would be greater under this alternative than under the proposed project because about 200 piles would have to be removed from Pier 39 before installing about 114 new piles. This would cause more turbidity in the water surrounding the pier as compared to the proposed project.

Impacts relating to growth inducement would remain unchanged as compared to the proposed project.

REASONS FOR REJECTION

The Project Sponsor has rejected this alternative for the following reasons: (1) the structure at Pier 39 will not support the loads required for the proposed aquarium tank; (2) all existing space on Pier 39 is either fully leased to retail businesses or committed to circulation, public access and public open spaces; (3) location on the existing pier would cause overcrowding at the entry to Pier 39 and of available public open space; and (4) relocation to avoid any new fill would require demolition of the octagon building which serves as an entry to Pier 39. The Sponsor also believes that this alternative would not result in any significant environmental benefits which would outweigh the negative impacts of the proposed alternative and would, in fact, involve adverse environmental effects.

D. ALTERNATIVE FOUR: NON-WATERFRONT LOCATION

DESCRIPTION

Under Alternative Four, the proposed project would be constructed on Seawall Lot 314 which is bounded by Bay and Kearny Streets and the Embarcadero. This lot is approximately 38,000 gross square feet and currently contains a gas station, automatic car wash and a parking lot, all of which would be displaced. This alternative would include the same characteristics as the proposed Underwater World project including the exhibit area, gift shop,and the aquarium. The project site would utilize the entire 38,000 square foot site for the aquarium building, promenade and entrance (compared to the 25,400 square feet for the proposed project) would be of similar functional design and include the same facilities as the proposed project.

The site of this alternative is entirely on existing fill. There would be no need for additional fill and piles to support the building (the proposed project has approximately 114 piles).

IMPACTS

Impacts relating to air quality, zoning, and growth inducement would be approximately the same as the proposed project.

Under this alternative, there would be no changes to the project site as it now exists. The Pier 39 amusement facility would remain the same, and the service road and the sixteen boat slips in the Pier 39 Marina (which would be removed with the proposed project) would remain unchanged.

- Impacts relating to land use would be greater than those associated with the proposed project since this alternative would fully displace an existing use. That use, the Chevron gas station, a parking lot for approximately 20 cars and the automatic car wash, would be removed, decreasing the availability of service stations in the Fisherman's Wharf area and diminishing the overall parking supply in the vicinity. This use is currently operating on a month-to-month license. This alternative project site would continue to be within the jurisdiction of the Port of San Francisco. It would not be within the jurisdiction of the Bay Conservation and Development Commission (BCDC).

The alternative project site would be on the south side of the Embarcadero and surrounded by buildings to the west and south that are three and four stories tall. The transition to the two-story aquarium structure could be minimized with compatible design features. Existing views from the Northern Waterfront Park along the waterfront and Pier 39 Marina would remain unchanged.

The same number of visitors attracted to the alternative project would be expected to be about the same as the proposed project. Transportation impacts associated with parking, volume/capacity flows, vehicular-related air quality emissions, and vehicular-related noise would therefore be approximately the same. However, pedestrian circulation patterns would change. Pedestrians approaching the alternative site from other waterfront attractions or visiting other attractions after attending the alternative aquarium site would need to cross the Embarcadero. A signalized pedestrian crossing is available immediately north of the Embarcadero/Beach intersection. Pedestrian use of this intersection would increase under this alternative.

There would be no need for additional fill under this alternative. There would be no construction impacts to marine environment such as water turbidity and unsettling of

benthic organisms living on the Bay floor. The water usage during operation would have the same effects as the proposed project. An average of 160 gallons per minute would be needed for the recirculating filtration system, and 20,000 gallons per day would be needed for the filter backwash discharge system. Since the project site would not be located on the waterfront, an additional pipe system would be needed to transfer the water to and from the site. It would be expected that Bay water would be extracted and discharged from a site close to the currently proposed project site. Therefore, the effect from extraction and discharge of seawater would be the same as the proposed project.

Since no piles would be driven, the potential changes to geology and topography would be less than the proposed project. The effects of construction noise would be less than the proposed project as there would be no pile driving. Operational noise from additional pumps necessary to transfer water from the Bay could result in a greater noise impact than the proposed project.

REASON FOR REJECTION

The Project Sponsor has rejected this alternative for the following reasons: (1) such a location would create an undesirable isolation of the aquarium from other visitor attractions and make pedestrian access more difficult; (2) the location would detract from the desired marine environment which is a primary feature of the proposed project; (3) visitors would not have access to the water's edge, resulting in undesirable restrictions on planned educational programs; (4) it would be necessary to transport water from the Bay across or under The Embarcadero, creating an additional cost and burden (if permitted at all); (5) the Project Sponsor has no interest in or control over the alternative site; (6) it would be necessary to displace an existing use; and (7) such a location would be more distant from available parking at the Pier 39 garage and at other parking facilities at Fisherman's Wharf.

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[1] Randy Rossi, San Francisco Port District, telephone conversation, April 14, 1988.

[2] San Francisco Bay Conservation and Development Commission, San Francisco Waterfront, Special Area Plan, Amended April, 1975.

[3] City and County of San Francisco Municipal Code, Planning Code.

[4]Op. cit., Northeastern Waterfront Plan, page 45.

[5]Op. cit., Northeastern Waterfront Plan, page 11.

[6]Op. cit., Special Area Plan, page 26.

[7]For a description of traffic conditions in this area, see the Rincon Hill Plan EIR, City and County of San Francisco, 82.39E, certified June 27, 1985.

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● X. SUMMARY OF COMMENTS AND RESPONSES

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF CITY PLANNING

SUMMARY OF COMMENTS AND RESPONSES

UNDERWATER WORLD AQUARIUM AT PIER 39

86.674E

State Clearinghouse No.: 88020217

Publication Date: August 12, 1988
Public Hearing Date: September 29, 1988
Public Comment Period: August 12, 1988 through September 29, 1988
Certification Date: July 20, 1989

Changes from the text of the original Summary of Comments and Responses are indicated by solid dots (●) at the beginning of each revised sentence, paragraph, section, or table.

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I. INTRODUCTION

This document contains summaries of the public comments received on the Draft Environmental Impact Report (DEIR) prepared for the proposed Underwater World Aquarium at Pier 39 project and responses to those comments. Also included are staff-initiated text changes and errata.

All substantive verbal comments made at the Draft EIR public hearing before the City Planning commission on September 29, 1988, and all written comments received during the public review period from August 12, 1988 through September 29, 1988, are presented herein by direct quotation, edited to delete repetitive and nonsubstantive material only.

Comments and responses are grouped by subject matter and arranged by topics corresponding to the Table of Contents in the EIR. Each group of comments is followed by its set of responses; the order of the responses under each topic follows the order of the comments. As the subject matter of one topic may overlap that of other topics, the reader must occasionally refer to more than one group of comments and responses to review all information on a given subject. Where this occurs, cross-references are provided.

Some comments do not pertain to physical environmental issues, but responses are included to provide additional information for use by decision-makers.

These comments and responses will be incorporated into the Final EIR as a new Chapter. Revisions resulting from comments and responses will be incorporated into the Final EIR, as indicated in the responses.

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(slipsheet)

III. SUMMARY OF COMMENTS & RESPONSES

A. PROJECT DESCRIPTION

COMMENT

"I am writing to you in regards to Pier 39. Pier 39, and especially the video arcade, is one of the great places in the City for children and youths. In fact, San Francisco kids recently rated it as one of the most safe and most fun places in the City (Kids Place Survey, 1987).

"We need to plan for our children and preserve environments which enhance and encourage their lives. This project will remove the arcade. Please consider the impact this will have on San Francisco children. Thank you." (Kelly Cullen)

"I think the other flaw in the document is that it ignores sort of what Pier 39 was supposed to be. And as I remember what it was supposed to be, it was supposed to be for all age levels and reasonable enough so that all kinds of kids could go. And the video games and the other games, I think, are one of most popular places for kids -- not that an aquarium wouldn't be, but this city has an aquarium and it does not have safe, cheerful, pleasant places like you would displace.

"On page 30, it's doing the environmental setting, and it talks about San Francisco having all these other places -- educational, recreational establishments. I would like something in there about this video attraction -- and it isn't just videos. It's games for all ages. I am a grandmother, and I know what is there because it's a resource for me and my grandchildren. And I think it is totally ignored in this document. They would join me in that were they here." (Sue Bierman - Hearing)

"On my third page of comments I want to direct your attention to my paragraph that is talking about young people. I was surprised in talking to people, because something that I never thought of as an issue really is an issue. And one of the things I turned in was the comment from the Tenderloin Youth Advocates.

"This place is on on [sic] the hit parade of where kids like to go. If you have teenagers in San Francisco, if you have teenagers in San Francisco, if you have teenagers in the Bay Area, Pier 39 is a place they like to go because it has a kid orientation in that amusement area. That is a real concern. We are talking away a place that San Francisco teenagers of all races go to, have a good time. They spend their money, but it's not through the roof, and their parents feel it's safe. And we are taking that out totally and replacing it by another tourist trap. It's a wax museum except for fish. And that is a big concern, I think, to families. And there ready [sic] needs to be thought-out policy on what impacts this project is going to have on kids. Like I said, I was shocked because I don't think in those terms, but I found an awful lot of people do." (Sue Hestor - Hearing)

"Continued commercial recreation offerings for pre-teenagers, to replace those to be removed for the Aquarium." (Telegraph Hill Dwellers)

RESPONSE

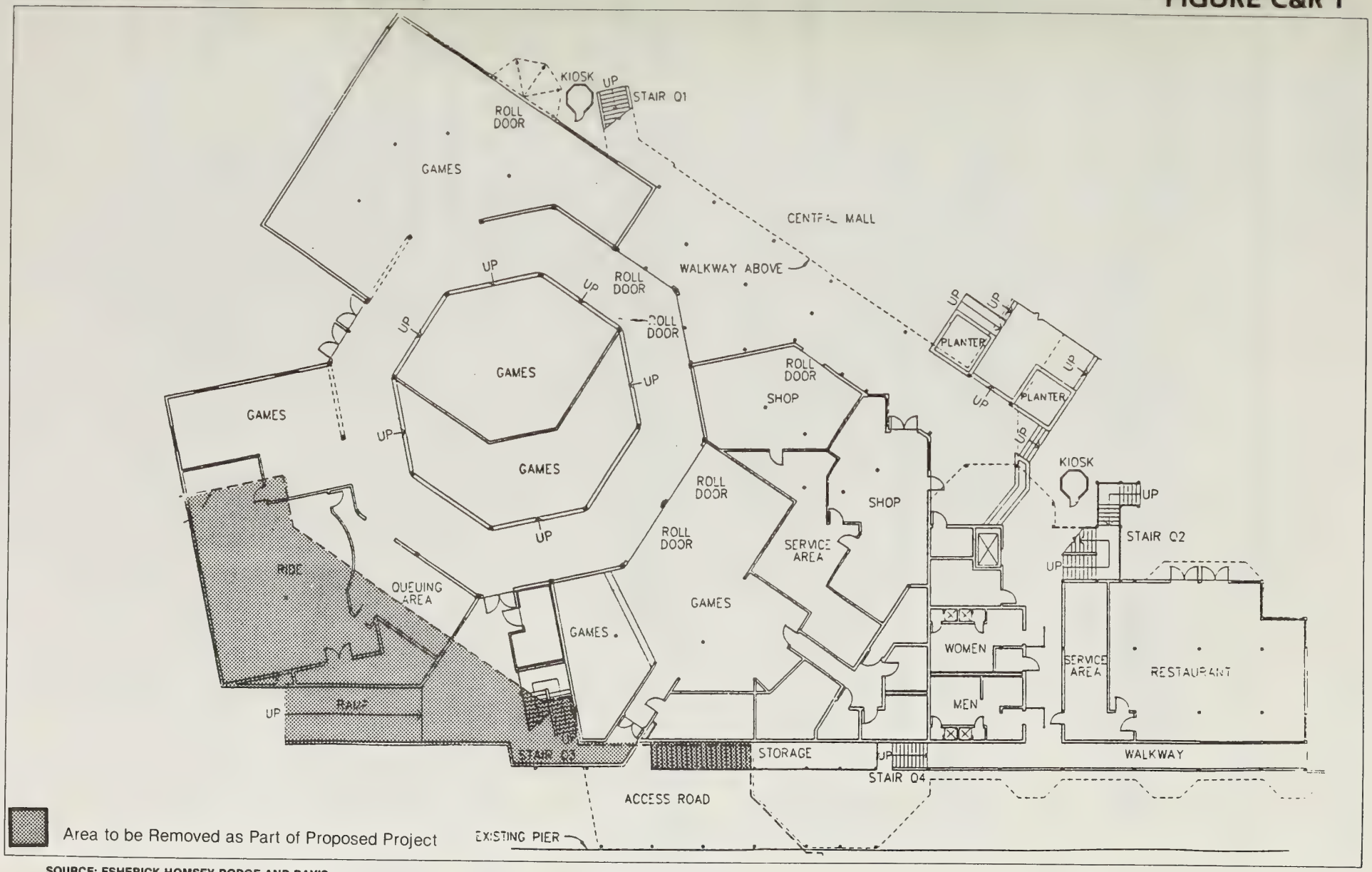
The Draft EIR, page 10, states that "the proposed aquarium would be built on the southeastern corner of Pier 39, where an existing amusement arcade now exists." This statement is somewhat misleading as only a portion of the existing amusement facility would be demolished with the proposed project. The portion of the amusement facility which is proposed for removal with the project is the "mindscaper" simulation ride which occupied the eastern part of Building Q (see Figure C&R-1). The video arcade to which the commenters refer would be left unchanged with the proposed project.

Page 1, second paragraph, the last sentence is revised to read as follows (revisions are underlined):

> "The proposed aquarium would be constructed on the southeast edge of the existing Pier 39 complex, on a site which presently contains <u>portions of the existing</u> amusement facility, <u>a public accessway</u>, and <u>18</u> boat slips in the Pier 39 marina."

EXISTING FIRST FLOOR PLAN

FIGURE C&R 1



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

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Page 10, last paragraph, the second sentence is revised to read as follows (revisions are underlined):

> "The proposed aquarium would be constructed on the southeast edge of the Pier 39 complex which presently contains portions of the existing amusement facility, a public accessway, and 18 boat slips in the Pier 39 marina."

COMMENT

> "Page 10 - The objectives of the project are pollyanna-ish. Pier 39 wants to make money. This is not an educational enterprise -- the 'educational environment' objective is nearly always done by non-profits, like the Steinhart. This is not such. Also, presumably Pier 39 wants to lock more people into their operation, so that their other businesses will have more revenue. What is their objective in removing the current amusement facility? That facility serves to a great degree San Francisco young people? It is a very attractive facility for them on the wharf and gives local young people a reason to go to Fisherman's Wharf." (Sue C. Hestor)

RESPONSE

The project sponsor has identified a wide range of objectives, one of which is to "provide an educational environment in which children can experience the types of marine life that are indigenous to the San Francisco Bay; . . ." Other stated objectives include the provision of a quality recreational/tourist experience, highlighting the need for Bay conservation, enhancement of the "nautical" identity of the waterfront, contributing to the tourist economy, achieving a reasonable return on investment, and provision of employment opportunities. The EIR does not try to evaluate the potential success of the sponsor in meeting his objectives, and does not come to conclusions about the merit of these objectives. Rather, the EIR provides information about the potential environmental consequences of undertaking the project.

COMMENT

> "The Draft does an incomplete job of describing the authority and approvals required from the Port Commission and staff. Paragraph 3, p. 26 should be expanded to include:

"o Port has review of design of building, proposed signage, and any changes to the Pier 39 garage.

"o Port Commission would have to approve several of the mitigations measures, especially the removal of parking on Beach St.

"o The Port Commission must review, cite and adopt this EIR in support of their actions." (Richard J. Wiederhorn, Port of San Francisco)

RESPONSE

Page 17, the last paragraph, the last sentence, is revised to read as follows: "All City, regional and State agencies must review and consider the information contained in the Final EIR before making any decision to approve the project."

Page 26, paragraph three, the third sentence is deleted and the last sentence becomes a new paragraph.

Page 26, the following is added after the third paragraph:

"Building and other related permits would be under the jurisdiction of the Port of San Francisco. As part of its permit review process, the Port would review the design of the building, proposed signage, and any changes to the Pier 39 garage. The Port Commission would be required to take action on any mitigation measures which would occur on or directly adjacent to Port land."

COMMENT

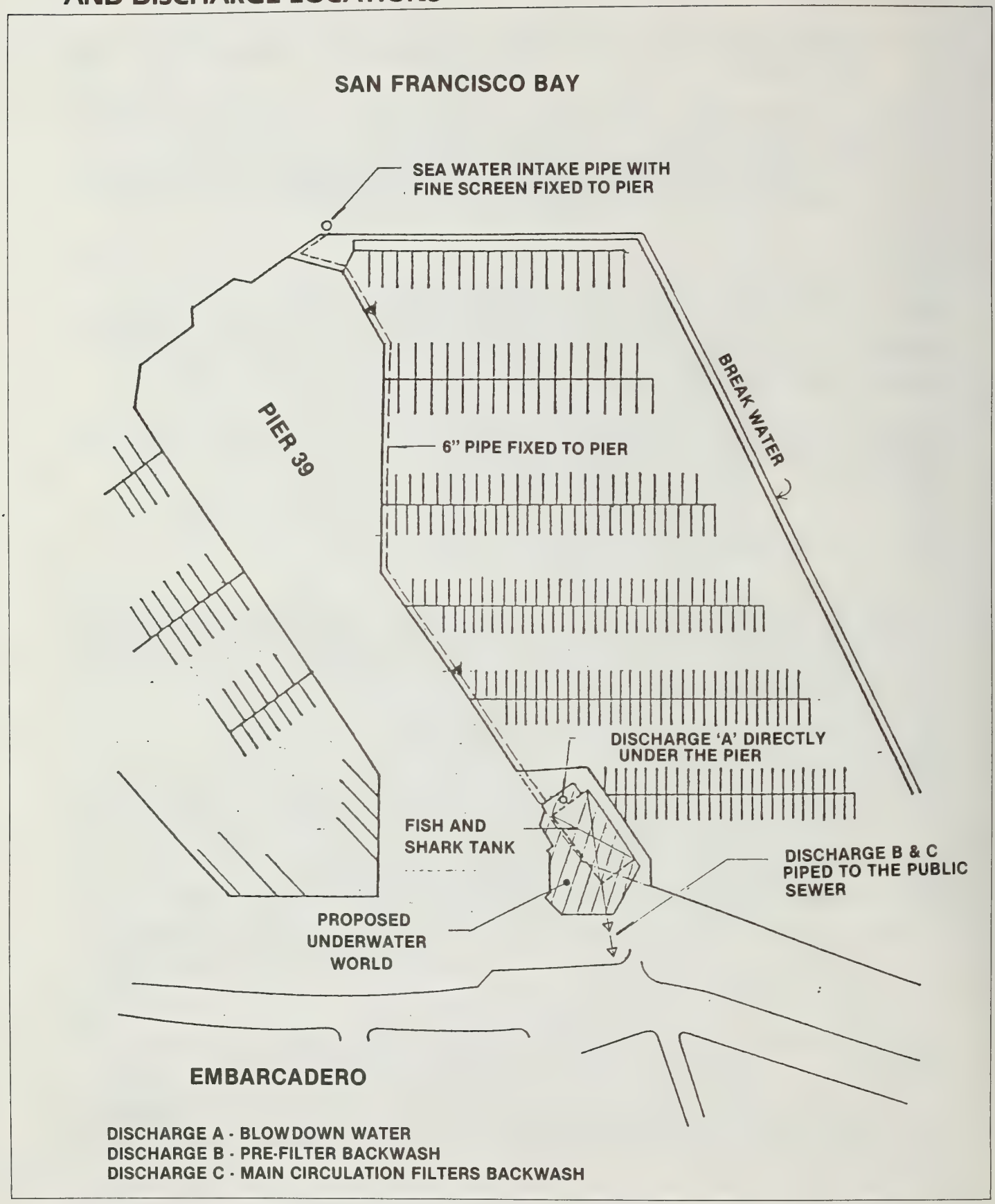
"Aquarium -- there is nowhere that I could find a graphic that shows exactly how and where water will be taken in and discharged. How big a pipe? How much water gets sucked in at what rate? What mechanism to prevent other things from entering in-flow pipe? How does it get cleaned? Will it float? What kind of obstruction may it cause? This is an enormously important chunk of missing information which needs to be issued for comment all by itself, and should not be merely part of a Comments and Responses document." (Sue C. Hestor)

RESPONSE

The seawater intake would be located at the northeastern end of Pier 39, as depicted on Figure C&R-2 on the following page, fastened to existing pilings below the low tide water

SEAWATER INTAKE AND DISCHARGE LOCATIONS

FIGURE C&R 2



SOURCE: BRUCE WALLACE PARTNERS LIMITED

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line. The pipe would be six inches in diameter and would be suspended below the pier decking. It would not obstruct access to the pier in any way. The intake would be fitted with a fine screen. Access to the intake would be provided to allow periodic cleaning of the screen. The maximum inflow rate would be 200 gallons per minute.

The filtered "blowdown" water would be discharged from a pipe below the proposed aquarium structure (see Figures C&R-2 and C&R-3). All filter backwash water would be discharged to the City combined sewer system. The blowdown water would be discharged via an eight-inch diameter pipe to the Bay under the proposed building. The pipe would be turned horizontal at the discharge point. The outlet would be eight feet above the Bay bottom and a minimum of four feet below the water surface. The maximum flow rate of discharge would be 264 gallons per minute.

For comparison, the San Francisco Clean Water Program operates several discharge pipes in the area, which discharge overflows of the combined sewer system during wet weather. These include two 48-inch pipes each under Pier 35 and Pier 33, which discharge at the ends of the piers. These pipes are each designed to discharge 170 million gallons per day, and actually discharge at a rate of 140 million gallons per day each (or about 100,000 gallons per minute), when operating.[1] Thus, the proposed aquarium discharge would be several orders of magnitude less than existing discharge.

COMMENT

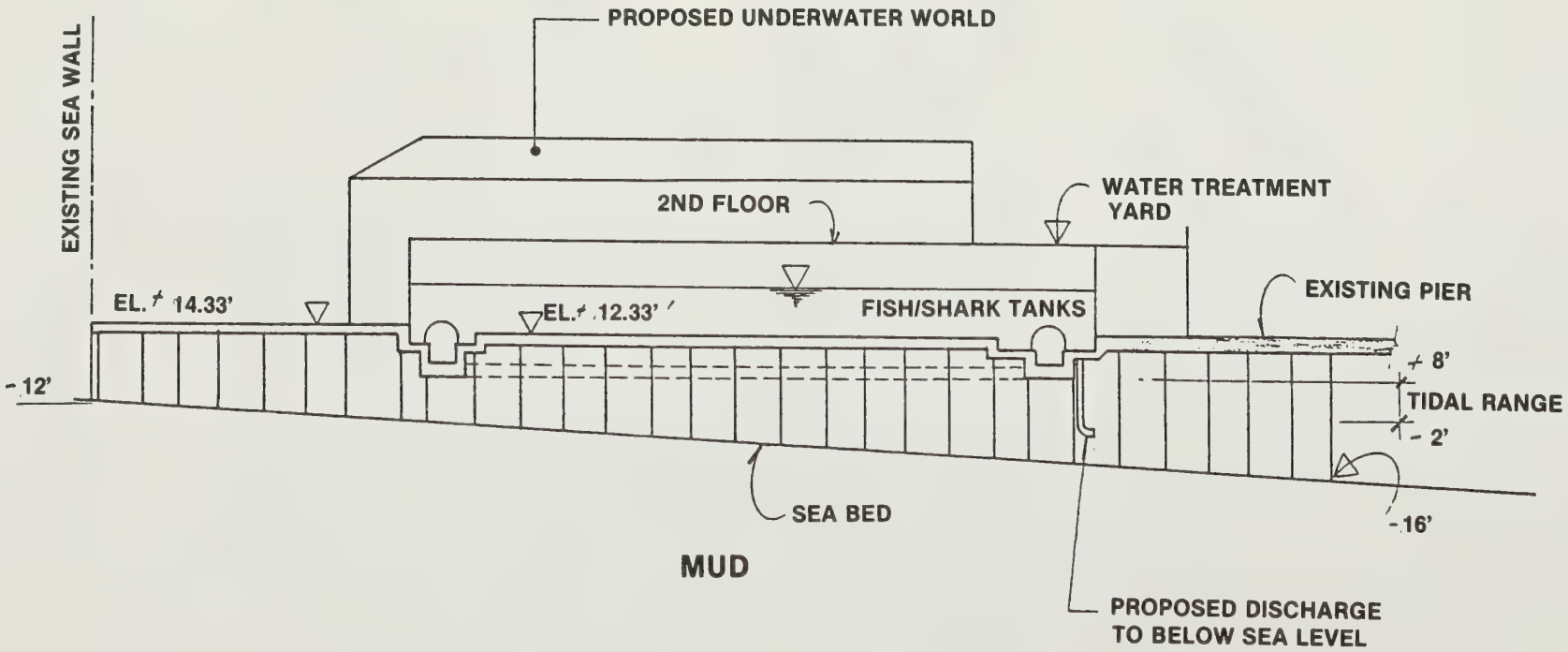
> "On Page 14, just describe what function room is and public spaces. It's awfully vague." (Sue Bierman - Hearing)

RESPONSE

The function room would be available for all types of gatherings at the aquarium. These types of gatherings would primarily consist of educational programs and seminars for children and adults which would be conducted at the facility. The public spaces referred to on page 14 of the EIR include restrooms and second floor exhibit area.

NORTH - SOUTH SECTION SHOWING PROPOSED LOCATION OF DISCHARGE PIPE

FIGURE C&R 3



SOURCE: BRUCE WALLACE PARTNERS LIMITED

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COMMENT

"Also, please just state what is on the third floor. Says to look in a table, but there is just a theater there, so maybe just say that that is what is there." (Sue Bierman - Hearing)

RESPONSE

The total of 550 gross square feet of space on the third floor, identified in Table 2, page 15 of the EIR, would be required to house a new stairway and related space at the third floor of Building Q. The stairway currently exists as an exterior stairway and, thus, is not considered part of existing floor area. The project would result in the demolition of the existing stairway and replacement with the third floor stairway in Building Q. This is a large amount of space to accommodate a stairway, but is necessary due to the odd shapes of the existing Building Q and the proposed Underwater World structure which result in inefficient layout of the stairway.

COMMENT

"This is very important because, according to the calculations I have made, by the time this project is getting through the end, you will have already had EIR's out on the Pier 45 study and on the redevelopment study, and the redevelopment study and Pier 45 study are going to generate very critical information on traffic and on circulation problems and mitigation measures. So if you have a project that is going through the process and all of a sudden you have different information, you're going to have to amend the EIR.

"You need to have out, very clear, so you all understand whether there is a big rush, whether it should be going through this quickly, how you are going to impact Pier 45. It needs to be here so you can make an intelligent decision of, is this the right time to consider this project?" (Sue Hestor -Hearing)

"Page 17 - Project Approvals. This is a very weak section. Please provide an approval flow chart that shows the order in which steps will be taken and the amount of time to go through each of them. My estimate is that even if the project is approved at every level, it will take at a minimum until next fall." (Sue C. Hestor)

"Project approvals. This is really critical. The flow. My guess is that this project, under the best of all circumstances, is going to take a year to get through the process, given the reality of all of the actors out there and how long it takes anyone to act, including the Board of Supervisors, which is going to have to approve the lease terms, which isn't even on the list." (Sue Hestor - Hearing)

RESPONSE

Other than the fact that the EIR must be certified before the project can be considered by any decision makers, there is no required sequence for the City agency actions on the project. There is also no mandated period of time for the consideration of most of these actions. The City Planning Commission's action on the Conditional Use Authorization can be considered as soon as the EIR is certified, if the Commission and staff feel that all the information needed by the Commission (in addition to the EIR) is available, and when the staff work (including publication of notice in a newspaper of general circulation 20 days before the hearing) is complete, and when time is available on the Commission's calendar. (See Section 306 of the City Planning Code for more detail on this process.) Once an item has been calendared, the Commission has considerable discretion about acting on an item, or continuing it to another date for a variety of reasons. It is not possible to specify the length of time this process could take.

The Commission's approval or disapproval of a Conditional Use Authorization is appealable to the Board of Supervisors within 30 days of the Commission's action. The Board must set a hearing date within 30 days of the appeal and must decide the appeal within 30 days of the hearing. (See Section 308.1 of the City Planning Code for more detail on this process.) Once again the timing of this consideration, should it be appealed, cannot be specified with any accuracy. It would depend on the Board's calendar, and the inclination of Board members to conclude the matter or to continue it.

The Port Commission's action on the lease need not necessarily occur before or after the City Planning Commission's action on the Conditional Use Authorization, although it can only occur after the certification of the EIR.

Staff work for the Port Commission's action is likely to occur concurrently with that for the City Planning Commission. As the commenter notes, the lease amendment must be

approved by the Board of Supervisors. The EIR will be corrected to show this action. The lease amendment might or might not be concluded before the final action on the Conditional Use Authorization. As with the Conditional Use Authorization, the timing of consideration of the lease amendment by the Port Commission and the Board cannot be specified with any accuracy. It would depend on the Port Commission and the Board's calendars, and the inclination of Commissioners and Board members to conclude the matter or to continue it.

While there are no rules about when in the process the Arts Commission must review projects, it typically considers projects requiring Conditional Use after the City Planning Commission acts.[2]

The City must act on a project, for which an EIR is required, within one year of accepting the application for approval as complete. In this case the relevant application is the application for Conditional Use Authorization, which was submitted on January 9, 1989 and accepted as complete on January 31, 1989. This requirement is established by California Government Code Sections 65920 et seq., often referred to as AB 884. CEQA also requires that the City certify the EIR within one year of accepting the application requesting approval (again, the Conditional Use application) as complete (CEQA Section 21151.6).

The Regional Water Quality Control Board typically considers projects concurrently with local agencies.[3]

The Bay Conservation and Development Commission's consideration of the project cannot occur until local approvals have been granted, although BCDC staff will begin informal review of a project before a formal application is filed. BCDC staff and the BCDC Design Review Committee (an advisory committee to the Commission) have begun this informal review process.[4] The U.S. Army Corps of Engineers expects to review the project concurrently with BCDC.[5] A permit from the Bay Area Air Quality Management District may be required for operation of the ozone water treatment system. BAAQMD will consider the project concurrently with other agencies.[6] The EIR is changed to show this action.

It is possible that other studies will be performed and environmental documents issued during the time that the project is being considered by decision makers. See the response on pages C&R 43-48 for a discussion of other projects in the area, their likely schedules, and the relationship of the study approach in those environmental documents to that in this EIR. If new information becomes available that indicates that this project could result in significant new environmental impacts which are not disclosed in this EIR, a Supplemental EIR will be prepared.

Because of the dynamic nature of the urban environment, the ongoing nature of study of environmental issues, the continuing environmental review process, and the length of time involved in preparing reports, it is always possible that new important new information will become available. However, for these same reasons, it will never be possible to conduct a study or issue an environmental document which will result in "final" answers.

COMMENT

"Concerning the 80 Francisco garage, what kind of a lease does the aquarium have with the 80 Francisco garage? Is it one month? Is it six months? Is it a year? Is it the term of the aquarium's lease? It's a good question." (Joseph Alioto - Hearing)

". . .what kind of a lease does the aquarium have with the 80 Francisco garage? Is it one month? Is it six months? Is it a year? Is it the term of the aquarium's lease?" (Nunzio Alioto - Hearing)

"Has the project sponsor reached a long term or short term agreement with AMPCO parking? What guarantee does the sponsor have to insure that this mitigation measure will be able to be maintained over the life of the project?" (M.K. Veloz)

"The draft EIR fails to address the manner in which the sponsor has guaranteed the continuing long-term, life-of-lease, parking availability for weekends and holidays at the proposed Francisco Street parking facility. The draft EIR does not adequately address tne terms of the proposed parking arrangements." (Robert Pickard)

RESPONSE

The project sponsor would enter into a lease for 20 years with the owners of the garage at 80 Francisco Street providing for use on all Saturdays, Sundays and holidays during which Underwater World would be open for business. It is the intention of the project sponsor that, after 20 years, the lease would be renewed or other parking would be substituted. However, there is currently no guarantee that the lease would be renewed or the spaces substituted, unless the CPC chooses, as part of its conditions of approval, to require the project sponsor to make such spaces available permanently or for the life of the use.

COMMENT

"p. 10: An aquarium can enhance the marine identity and image, not the 'nautical' identity and image of Fisherman's Wharf. Nautical means 'of or having to do with ships, sailors or navigation.'" (Irene Nishimura, Port of San Francisco)

RESPONSE

Page 10, first paragraph, the ninth line is revised to read as follows (revisions are underlined):

" . . .Bay; to enhance the <u>marine</u> identity and image of Fisherman's Wharf; to enhance and . . ."

COMMENT

"p. 11: Figure 1 leasehold boundary lines are incorrect. According to this exhibit, some of Pier 39's marina is not even in their lease." (Irene Nishimura, Port of San Francisco)

RESPONSE

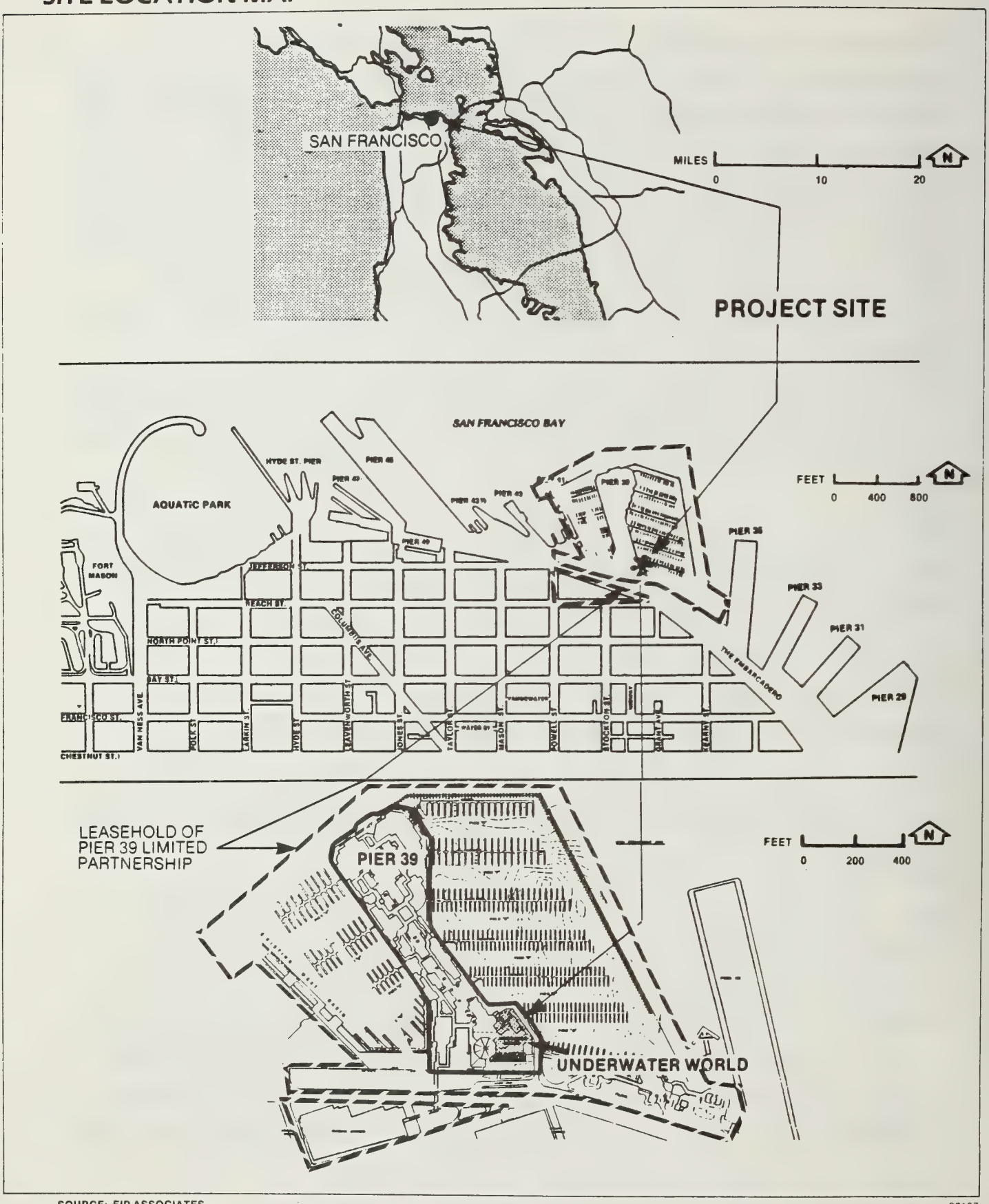
Figure 1 has been revised to reflect inaccuracies in the EIR. The revised Figure 1 is included on the following page.

COMMENT

"p. 27: It is not correct to say that the State Lands Commission has 'jurisdiction' over the development and use of Port property, but rather has transferred the lands to be managed in trust under the terms of the Burton Act and Transfer Agreement. They

SITE LOCATION MAP

FIGURE 1



SOURCE: EIP ASSOCIATES

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hold a 'reversionary' interest should the Port/City default on their responsibility." (Irene Nishimura, Port of San Francisco)

RESPONSE

- Page 27, second full paragraph, the first and second sentences are replaced with the following:

> "In 1968, the State of California, in accordance with the Burton Act and the accompanying Transfer Agreement, transferred the administration, management and operation of port property to the San Francisco Port Commission. The Port Commission holds these lands in trust under the jurisdiction of the State Lands Commission which determines that the use of port land meets public trust provisions. No permit is issued by the State Lands Commission."

COMMENT

"Page 14 - Second floor deck - this new open space will be only available to paying customers of the aquarium. What is its relationship to current facility. Is that view currently available for free to the public (perhaps at a lower level)? How heavy is 707,000 gallons of salt water?" (Sue C. Hestor)

RESPONSE

The project as currently proposed includes a second floor deck that would be accessible to all members of the public, regardless of whether they are aquarium patrons. Access to the deck would be via the second level walkway inside Pier 39 or from a three-tiered staircase beginning in the Northern Waterfront Park, immediately east of the proposed aquarium structure. The view that would be open from this new deck is similar to (although at a higher level than) the view currently available to the public at ground level from the perimeter road around Pier 39, and which would continue to be available to the public at ground level.

Salt water is fractionally heavier than fresh water, which weighs eight pounds per gallon. The actual weight depends on the particular salt content of the ocean water. The water in the proposed aquarium would weigh approximately 6.6 million pounds.

COMMENT

"How many of the listed approving agencies have been heavily involved in the development of this DEIR? Does it provide the information that BCDC, SLC and RWQCB need? Are they 'responsible agencies?'" (Sue C. Hestor)

RESPONSE

The San Francisco Bay Conservation and Development Commission, and the Regional Water Quality Control Board are both responsible agencies for this project as defined in CEQA, because they have discretionary approval power over the project. The State Lands Commission is a "trustee" agency as defined by CEQA. The Final Initial Study on the project in the form of a Notice of Preparation, published on January 29, 1988, was distributed to these agencies and others for their comments. Comments on the Initial Study and comments on the Draft EIR (included in this document) constitute the primary involvement of interested agencies in the development of the EIR. They were also contacted informally during EIR preparation. It is hoped that through this involvement, sufficient environmental information will be provided for each responsible agency. It is not anticipated that all information necessary for all agencies (including agencies of the City of San Francisco) to take all actions required on the project is included in the EIR. Much of the information necessary for project approvals is not relevant to the environmental impacts of the proposed project.

COMMENT

"Page 27 - What is the estimated date for start of construction?" (Sue C. Hestor)

RESPONSE

The project sponsor would begin construction of the proposed project as soon as all required approvals and permits were granted. As discussed in the Comment and Response on pages C&R 13-16, it is not possible to estimate with accuracy the amount of time this would take.

COMMENT

"Page 70 - the estimated number of removed slips seems awfully low when you look at the actual 'after' renderings and compare to current. Please double check this carefully." (Sue C. Hestor)

RESPONSE

The most up-to-date dock modification plan for the proposed project indicates that a total of 18 slips would be permanently removed by development of the project. During pile driving and foundation work there would be a temporary removal of 12 to 29 additional slips to accommodate construction activities and equipment barges, depending on the final construction plans. Final decisions regarding construction techniques (i.e., by land or water-borne barge) has not yet been made.

Page 1, second paragraph, the last sentence is revised to read as follows (revisions are underlined):

> "The proposed aquarium would be constructed on the southeast edge of the existing Pier 39 complex, on a site which presently contains portions of the existing amusement facility, a public accessway, and 18 boat slips in the Pier 39 marina."

Page 12, second paragraph, the fourth sentence is revised to read as follows (revisions are underlined):

> "This additional 19,400 square feet of new pier area would result in the removal of 18 boat slips that currently occupy the Pier 39 marina."

Page 70, last paragraph, the third sentence is revised to read as follows (revisions are underlined):

- "About 18 boat slips in the marina (of which 16 are leasable) would be removed and the lessees of the slips to be removed would be offered the option of either relocating to one of the approximately 50 vacant slips in the Pier 39 marina or transferring their leasehold interest to the Pier 39 Limited Partnership at prevailing market rates. During pile driving and foundation work, there would be a temporary displacement of from 12 to 29 additional boat slips to accommodate construction equipment and activities."

COMMENT

"8. Representations. Some of the illustrations in the EIR have major errors. For instance, pages 31-32, show the Pier and Sea wall. The Sea wall doesn't look anything

like the illustration. How accurate are the other representations in the EIR?" (Roy S. Mollard)

"p. 31: Exhibit does not show the present breakwater correctly but uses an old (and partial) representation of the floating tire breakwater.

"p. 32: Same as above re: breakwater (and slips)." (Irene Nishimura)

RESPONSE

Figures 10 and 11 in the EIR included inaccurate depictions of the configuration of the Pier 39 breakwater. Those corrections have been made and are included on the following pages. Because the configuration of the breakwater does not affect any analysis included in this EIR, there would be no changes to the impacts described for the proposed project.

The seawall is not shown on Figures 10 and 11.

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[1]Harold Coffee, San Francisco Clean Water Program, phone conversation April 13, 1989.

[2]Dennis Rumsey, Arts Commission staff person, phone conversation February 23, 1989.

[3]Steven Hill, Regional Water Quality Control Board, phone conversation February 23, 1989.

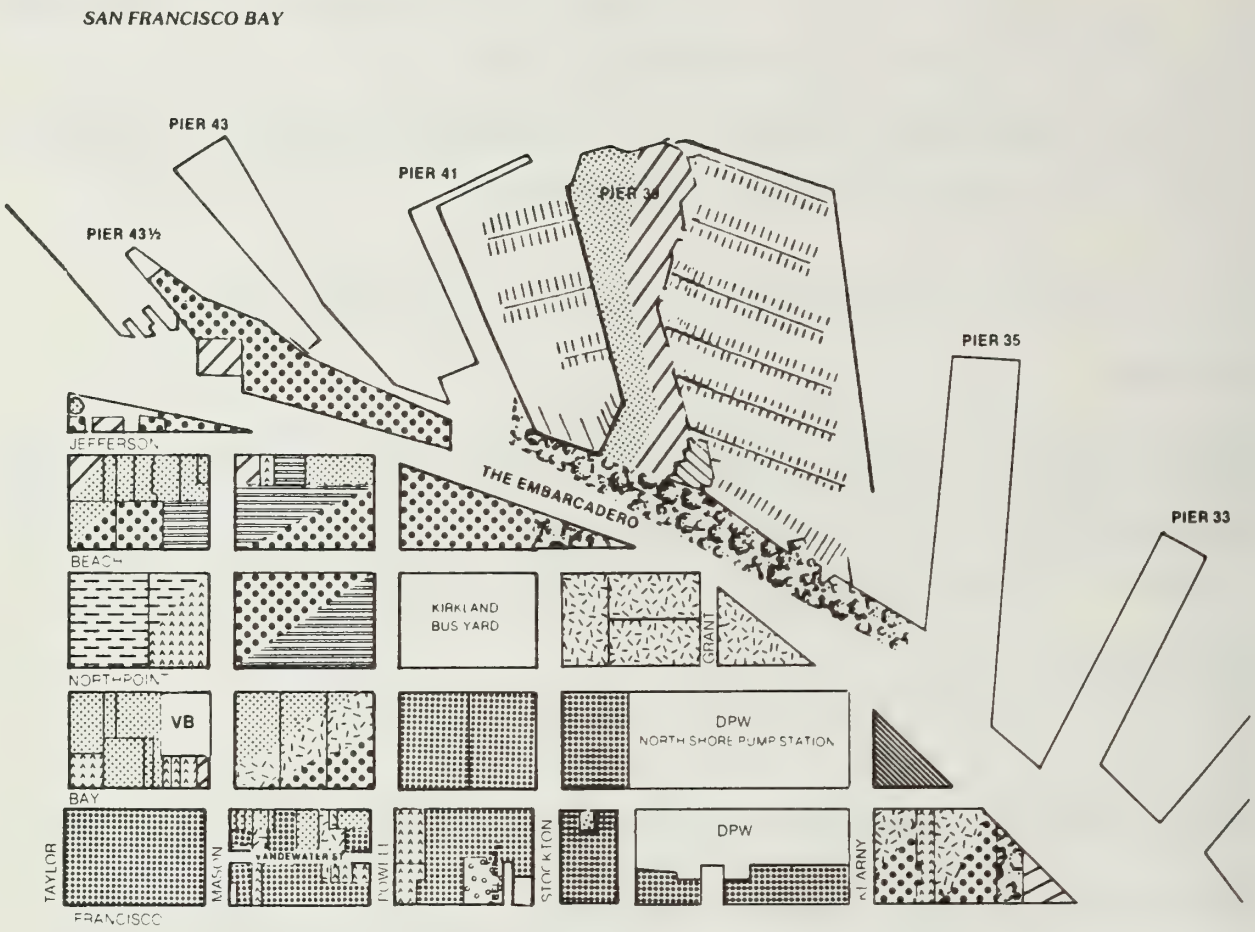
[4]Joan Lundstrom, Permit Analyst, Bay Conservation and Development Commission, phone conversation February 23, 1989.

[5]Joyce Minjaris, the U.S. Army Corps of Engineers, phone conversation February 23, 1989.

[6]Bill de Boisblanc, Bay Area Air Quality Management District, phone conversations April 14 and April 20, 1989.

EXISTING LAND USES IN THE FISHERMAN'S WHARF AREA

FIGURE 10



LEGEND

	Residential		Public Parking
	Retail		Private Parking
	Restaurant		Under Construction
	Hotel	VB	Vacant Building (Hotel Approved for This Lot)
	Office		Proposed Aquarium Site
	Other Commercial		Open Space
	School		Gas/Car Wash

SOURCE: EIP ASSOCIATES

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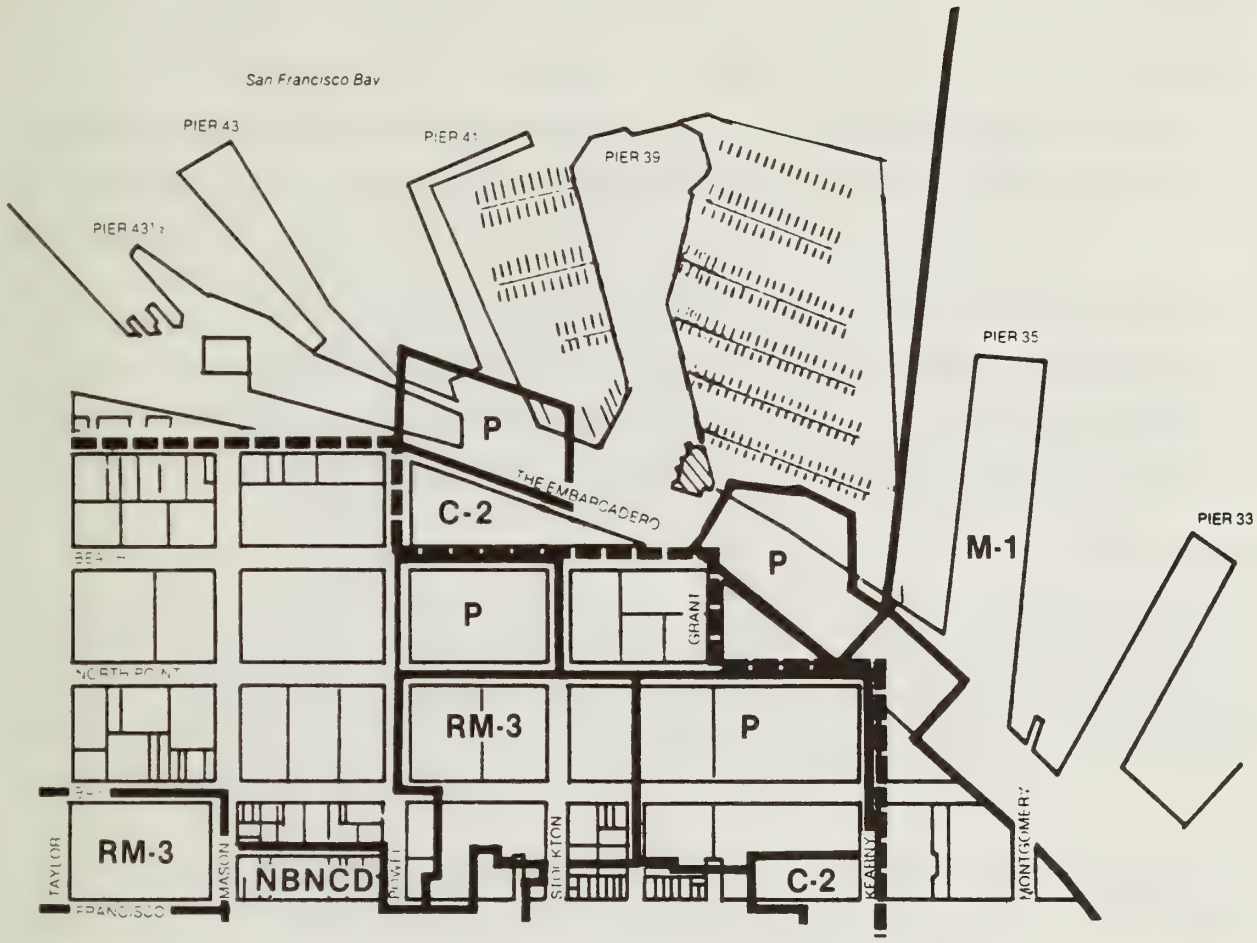
PLANNING CODE USE DISTRICTS

FIGURE 11



LEGEND

P	Public Use
C-2	Community Business
RM—3	Residential, Mixed: Medium Density
▬▬▬	Port of S.F. Jurisdiction
NBNCD	North Beach Neighborhood Commercial District
M-1	Light Industrial

SOURCE: EIP ASSOCIATES

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B. LAND USE AND ZONING

Bay Fill

COMMENT

"The DEIR (page 26) refers to the San Francisco Waterfront Special Area Plan, adopted by the Commission, which outlines policies for approving projects along the San Francisco Waterfront between the Maritime Historic Park and India Basin. The DEIR should further note that under Special Area Plan policies, permitted uses on new or replacement fill at Pier 39 are limited to maritime, public recreation/open space/public access, commercial recreation and marina uses. Further, the SAP states that: 'no parking for any non-maritime use should be permitted on new or replacement fill in the area of Piers 41 and 39.' " (Joan L. Lundstrom, BCDC)

RESPONSE

Page 26 describes the approval process. The discussion on page 38 of the EIR describes the policies of the San Francisco Waterfront Special Area Plan related to fill and replacement fill. The EIR quotes sections of the Plan which describe the conditions upon which new fill can be approved and the uses which are permitted on replacement fill.

Page 27, the following is added at the end of the first partial paragraph: "See page 38 for a description of the San Francisco Bay Plan and the San Francisco Special Area Plan No. 1."

Page 38, the following is added after the third paragraph: "Further, the Special Area Plan states that 'no parking for any non-maritime use should be permitted on new or replacement fill in the area of Piers 41 and 39.' No parking is proposed on new or replacement fill as part of the project."

COMMENT

"The discussion of 'fill' does not make any mention of fill credits. It should. Pier 39 said it has enough fill credits from their old floating tier breakwater to offset this 19,000+ square feet." (Richard J. Wiederhorn)

"Additionally, the S.F. Bay Conservation and Development Commission typically requires mitigation for the placement of fill in San Francisco Bay. While the DEIR recognizes this, it fails to acknowledge that mitigation is an important impact of the overall project which should be addressed directly by the DEIR. Mitigation sites around the Bay are becoming increasingly difficult to secure. The full extent of the environmental impacts of this project cannot be known until alternative mitigation proposals are discussed." (Marc Holmes)

"Mitigation for Placement of Bay Fill. The Commission may authorize fill for certain water related uses in the Bay, which includes pile supported fill, only when there is no alternative upland location and only when the fill is the minimum necessary to accomplish the project. If the Commission is to authorize some Bay fill for the proposed Underwater World, Commission policies require that unavoidable adverse environmental impacts of such fill be offset through mitigation. The DEIR should include a thorough analysis of mitigation measures for the placement of Bay fill including both no-fill alternatives and fill removal alternatives. The DEIR is not acceptable without such analysis. Since 1974 the Commission has required mitigation for the varous [sic] types of Bay fill, based upon its adopted mitigation policies in the San Francisco Bay Plan." (Joan L. Lundstrom, BCDC)

"Page 38 - BCDC fill standards. Can this be met? I think not." (Sue C. Hestor)

RESPONSE

The Bay Conservation and Development Commission has jurisdiction over projects within 100 feet of the Bay. BCDC policies with respect to permissibility of Bay fill are extremely complex and involve policy determination which must be made by that Commission. The policies and standards which will guide BCDC's consideration are contained in the San Francisco Bay Plan.

Policy 1 under the heading "Fills in Accord with Bay Plan" (page 36 of the Bay Plan) applies to projects which propose new Bay fill for "water-related recreation" purposes on publicly-owned property. BCDC can approve fill for such projects without requiring removal of fill.

Policy 5 under the heading "Fills in Accord with Bay Plan" applies to projects which propose Bay fill for "commercial recreation" purposes on publicly-owned property. Such Bay fill is limited to "replacement fill" and must include new public access and improved shoreline appearance. Replacement fill is defined as fill which replaces deteriorated piers which were removed from the "vicinity" of the project. Pier 39 is within Vicinity A, which extends from the Hyde Street Pier to Pier 9.

BCDC requirements for what constitutes "replacement fill" are complex. The final determination of the status of various additions and subtractions from the total stock of available fill which can be used for commercial recreation ("fill credits") in Vicinity A will be made by BCDC. The entire area is under the jurisdiction of the Port of San Francisco, which must be a co-applicant for a BCDC permit. The Port may or may not choose to apply fill credits earned elsewhere in the vicinity toward a commercial recreation project at Pier 39.

BCDC staff has reviewed this issue, and has supplied the following accounting of replacement fill credits from within the Pier 39 leasehold.[1] Fill credits were created in 1977 with the original authorization of Pier 39, which removed 327,000 square feet and added 104,000 square feet of pile supported pier. These credits are no longer available because BCDC has adopted a ten-year time limit for the use of fill credits. In 1983, BCDC authorized the replacement of 57,500 square feet of floating tire breakwater with a sheetpile breakwater, resulting in a net decrease of 38,500 square feet of Bay fill. This did not create a fill credit, however, because BCDC policies on fill credit apply only to the removal of deteriorated or obsolete pile-supported fill and not to the removal of floating or other types of fill.

The Port of San Francisco currently has accumulated a net total of 9,367 square feet of fill credit in Vicinity A. Other fill credits could become available if other deteriorated piers within Vicinity A were removed.

BCDC staff has provided preliminary calculations of the total amount of fill, and fill removal involved in the project, based on current design.[2] These figures are as follows:

+19,400	New pile supported fill for the proposed aquarium and perimeter access
+1,580	New cantilevered fill for the perimeter decks proposed for new public access
+840	New floating docks
-5,670	Removed floating docks
+16,150	Net new fill

Even if replacement fill credits are available, BCDC can only approve fill for commercial recreation projects, or for other permitted uses, if other Bay Plan standards are met. The Commission must find (among other things) that the project involves the minimum amount of fill necessary and that no upland location is available.

Mitigation measures acceptable to BCDC for Bay fill would be determined by that Commission when it considers the project. Possible mitigation measures include the removal of additional fill in Vicinity A, a reduction in the total amount of fill included in the project, such as Alternative 2, variant 2 (which would result in no new fill), Alternative 3 (which would result in less new fill than the project as proposed), and Alternative 4 (which would result in no new fill). There are no current proposals to mitigate impacts of Bay fill outside of Vicinity A.

COMMENT

"The impacts of Bay shading cannot be judged by the reader when the EIR says 'Only a portion of this (20,000 sq. ft.) would represent new shaded area because the proposed project would replace existing boat slips.' What proportion? Where are the numbers?" (Selina Bendix)

RESPONSE

Table 6 and Figure 21A, pages 72 and 73 of the EIR, depict new Bay shading effects of the project through the calculation of and depiction of new Bay fill. Table 6 identifies that there would be a loss of 19,400 square feet of open water surface. This area is shown in Figure 21A. The total square feet of open water surface which would be covered by the project was incorrectly presented in the EIR. Water coverage of the existing marina slips, a total of 5,670 square feet, was not accounted for in the original calculation. As such the revised total loss of open water surface is 16,150 square feet.

- Page 123, second paragraph, the second sentence is revised to read as follows (revisions are underlined):

  "Approximately 16,000 square feet of open Bay waters would be shaded by the new structures."

Table 6, page 72 of the EIR is revised to reflect those changes.

Figure 21B, page 74 of the EIR, has been revised as shown on the following pages to reflect project design modifications. Figure 21A is included for comparison.

Public Access

COMMENT

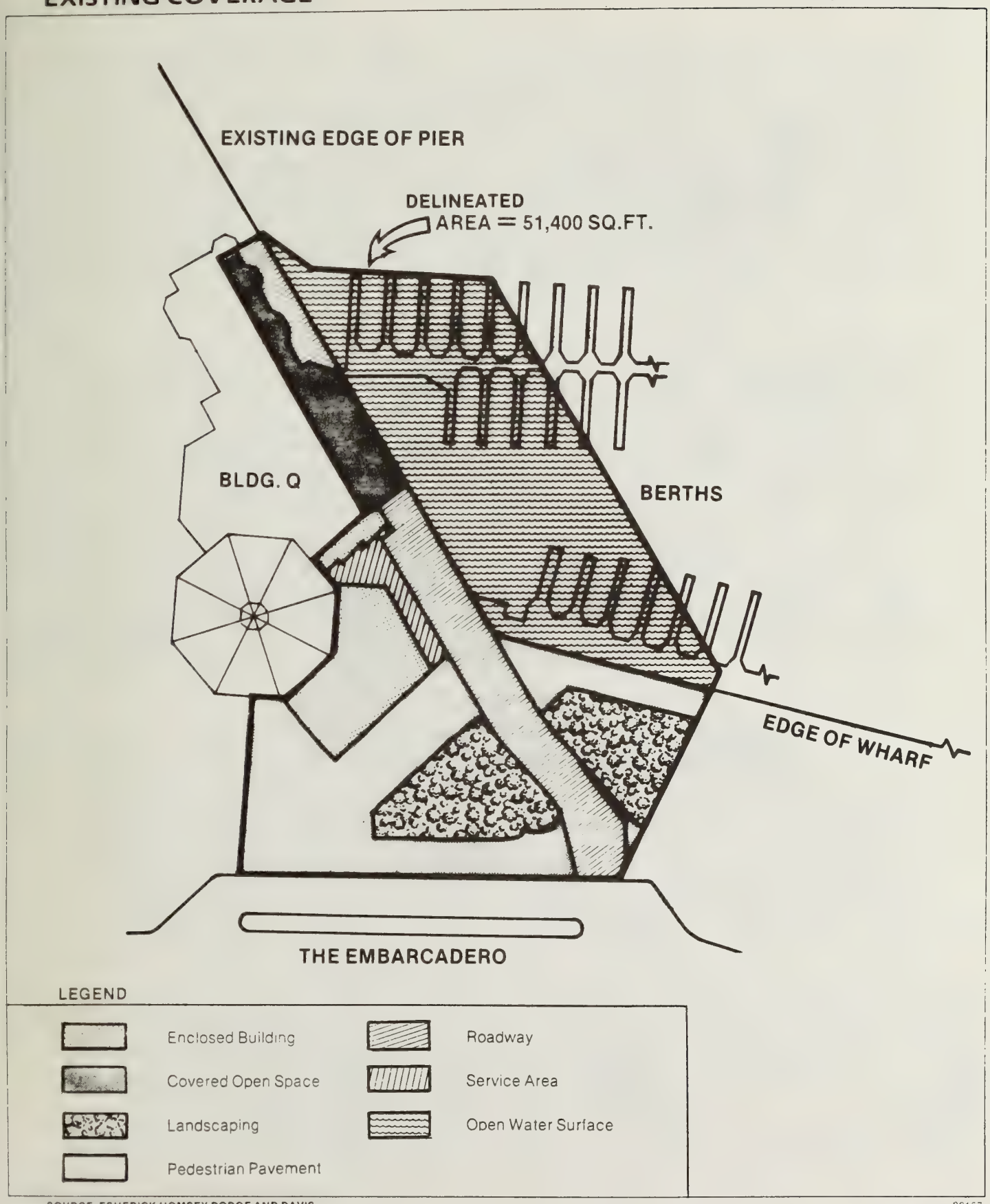
"Public Access. San Francisco Bay Plan policies on Public Access state that public access shall be provided with every project and that 'a proposed fill project should increase public access to the Bay to the maximum extent feasible.' The proposed project would eliminate 2400 square feet of landscaping and 500 square feet of pedestrian walkway. The DEIR states that the project sponsor proposes several public access/"open space" improvements. One proposal is to install bollards at the north end of Pier 39 to protect pedestrians from vehicles. This proposal appears to assume a reduction in public access of Pier 39 required by BCDC Permit (22-76) which restricts the entire pier perimeter for public pedestrian access only between the hours of 11:30 a.m. to 2:00 a.m. daily. The DEIR proposes to expand an open deck at the second story at the north end of the pier. This proposal will likely cause excessive shading of to the broad stairs below where the members of the public often sit to enjoy the spectacular views of the Bay and of Alcatraz Island, again reducing present access amenity. We believe these proposals are not acceptable and that other public access proposals should be explored." (Joan L. Lundstrom, BCDC)

RESPONSE

A number of actions have been proposed by the project sponsor, both to mitigate open space losses and to satisfy BCDC requirements for maximum feasible public access to the Bay. Overall, the proposed project would add 16,150 sq. ft. of net new fill. Ultimately, BCDC must determine which measures satisfy its requirements. The proposals are as follows:

PROPOSED CHANGES IN SITE COVERAGE
EXISTING COVERAGE

FIGURE 21A



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

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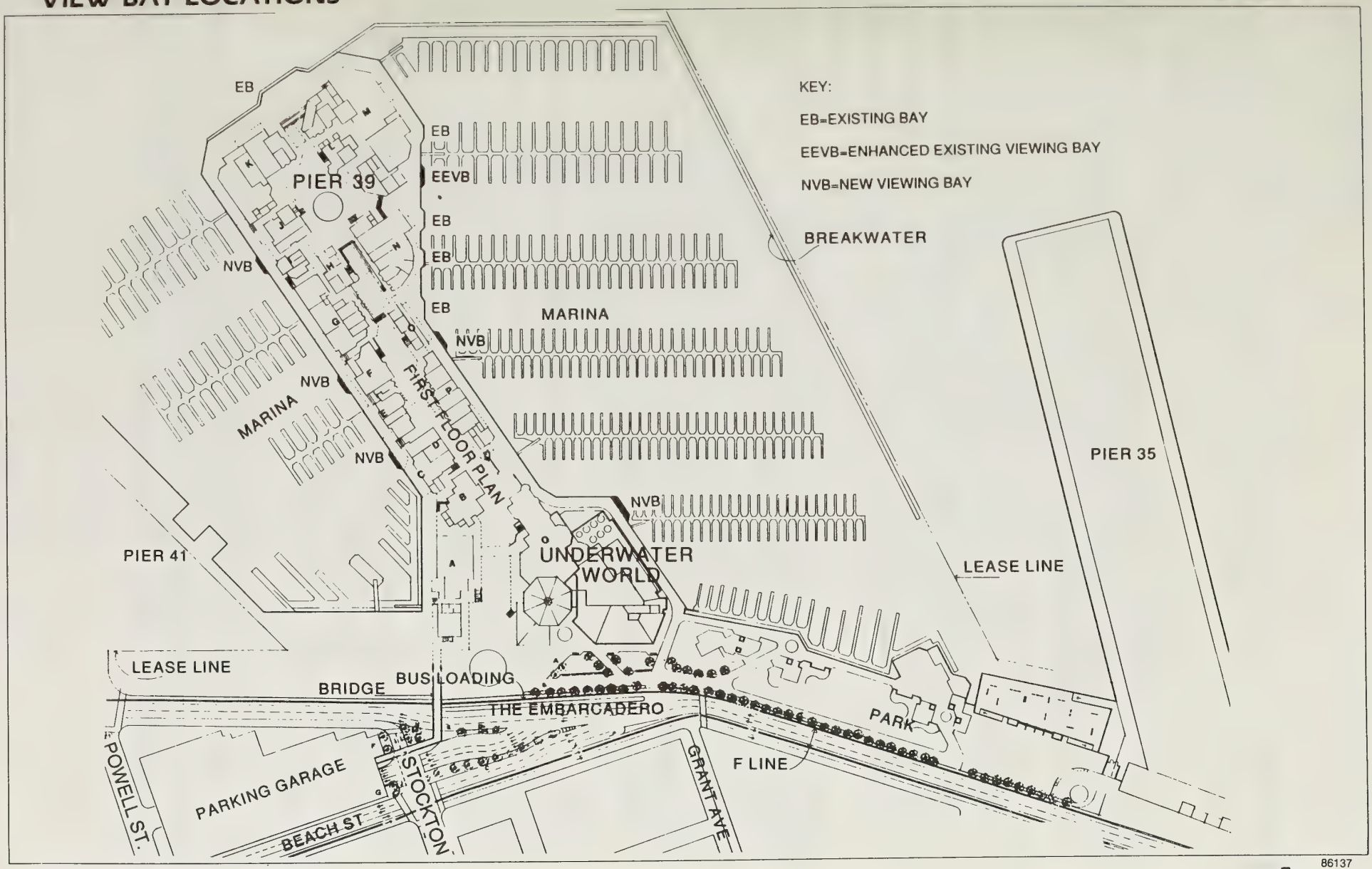
the project's public access will be made by BCDC when it considers the project. For a discussion of the public access requirements of BCDC Permit 22-76 see pages C&R 235 to 239.

VIEW BAY LOCATIONS

FIGURE C&R 4



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

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Pier 39 Marina

COMMENT

"1. Access to, and operation of, the Sanitary Pump-out station on A Dock. The problem here is that access is already limited, construction may reduce access, plus, there is the chance that the service may become unavailable due to Power interruption, breaks in the sewer line, etc." (Roy S. Mollard)

RESPONSE

According to the project engineers and construction contractors, the pump-out station at the end of Dock A would not be disturbed by the project or by construction equipment and activities necessary to build the project.

COMMENT

"2. Access to the Docks from the Bay.
"The EIR notes that piles will have to be removed, and new ones driven in. Will this require the Contractor to bring in floating equipment? Will this restrict boat access to the Marina or to any part of the Marina? What measures will be taken to ensure debris is not allowed to escape to where it could be a hazard to the operation of a boat, either on, in, or under the water? i.e. floating or submerged hazards to hull integrity, and suspended or submerged hazards to propellers, engine cooling water intakes, etc." (Roy S. Mollard)

"Another thing that is not addressed at all is access to the marina by water. There are an awful lot of words about access by road, but there is no assurance that all this construction is going to allow me to continue to enter and leave the marina when I want." (Roy S. Mollard - Hearing)

RESPONSE

The project construction contractor is evaluating the use of construction barges for use during construction activity. The final decision regarding construction techniques (i.e., by land or water-borne construction barge) has not yet been made. In the event that barges are used, they would be moored in the marina and would temporarily displace from 12 to

29 boat slips. During the construction period those displaced boats would be relocated to vacant slips elsewhere in the marina. As of December 1988 there were a total of 51 vacancies in the marina.

There would be some disruption of access to and from some slips on C Dock during construction. Due to removal of pier connectors to B Dock, a floating connecting bridge would be placed connecting B Dock to C Dock. Those boats on the pier side of the connecting bridge and on the south side of C Dock would be required to maneuver around B Dock to access their slips. Slip lessees on the undisturbed portion of B Dock would be required to enter on C Dock and walk to B Dock across the floating connecting bridge.

San Francisco Master Plan

COMMENT

"Page 34, Environmental Setting/Northeastern Waterfront Plan Element - Overall Goal - 'Limit additional uses which generate a concentration of activity during the same peak periods, in areas which are heavily impacted with such uses.' Clearly the proposed project would be another tourist attraction in an area heavily saturated with tourist attractions, like the Wax Museum, Harbor Tours, Ripley's Believe It or Not Museum and Pier 39's San Francisco Experience." (Peter Brown)

"The Northeastern Waterfront element of the San Francisco Master Plan also establishes goals which would be undermined by the operation of the proposed project. Objective 2, Policies 1, 2 & 3 regarding Land Use (DEIR, pg. 34) seek to promote the use of activities by a broad spectrum of the population, as well as to promote uses which have different peak periods of activity. The proposed Underwater World targets the same tourist population during precisely the same peak hours of activity as many of the other commercial operations at the Wharf. It would contribute to increased congestion and specialization of uses in the Wharf area." (Marc Holmes)

RESPONSE

The comment is noted.

COMMENT

"The proposal also seems to conflict with important principles of the San Francisco Master Plan. Objective 5, Policy 4 of the Commerce and Industry element states that planners should . . . 'Avoid actions which may serve to displace desired existing maritime uses.' Yet, as described in the paragraph above, increased tourist activities are strongly correlated to decline in the Wharf's fishing activities.

"Objective 5, Policy 7 has as its goal to . . . 'Restore the fishing industry in San Francisco.' Again, construction of the proposed facility is in significant conflict with this objective." (Marc Holmes)

RESPONSE

The comment is noted. The policies identified by the commenter are aimed at minimizing potential displacement of existing maritime uses and encouraging their continuance. The project, itself, would not displace any existing maritime, fishing or water-dependent uses, other than 18 marina slips. The desirability of the proposed use in the context of the overall land use pattern of Fisherman's Wharf will be determined by the decision-makers in their consideration of the project.

COMMENT

"Pages 33 - 38 - All you have done is put together a shopping list of Master Plan policies. There is not the slightest bit of analysis or informed discussion here. The 'impact' pages at pp 75 - 76 virtually slide over these policies. This needs a lot of work, since these findings are a necessary part of the Prop M and CU review." (Sue C. Hestor)

"10. The draft EIR fails to adequately address the true impact of the proposed project on the City of San Francisco Master Plan and accordingly, the Association seeks a detailed analysis of the project relative to the Master Plan." (Robert W. Pickard)

"On Page 33, I may be wrong, but it seems to me in other documents we have had Master Plan considerations in a table form so that you can really compare what the goal is and then how this conforms." (Sue Bierman - Hearing)

RESPONSE

The EIR, as required in the CEQA Guidelines, identifies relevant objectives and policies of the San Francisco Master Plan in the Land Use Setting Section. Staff found no apparent inconsistencies between the proposed project and applicable objectives and policies. There are no objectives or policies in the Master Plan which dictate a specific use on this specific site. This does not, however, lead to a conclusion that the proposed project, on balance, is in conformance. The Master Plan gives general policy direction, rather than dictating a single conclusion. Different policies are intended to further different goals, such as the provision of open space, the protection of existing desirable uses, the encouragement of new economic activity. These goals are both environmental and non-environmental in nature. In their consideration of the project, decision-makers will have to consider the various objectives and policies in order to determine whether the project, on balance, conforms to the Master Plan. This determination will be made by the City Planning Commission as part of its review of the project's Conditional Use Authorization and under the provisions of Proposition M. The staff report for the project will include an analysis of conformity with Master Plan policies as well as the staff recommendation.

Page 33, change the paragraph under San Francisco Master Plan to read:

> The San Francisco Master Plan contains objectives and policies which apply to the proposed project. Staff found no apparent inconsistencies between the proposed project and individual objectives and policies. There are no objectives or policies in the Master Plan which dictate a specific use on this specific site. This does not, however, lead to a conclusion that the proposed project, on balance, is in conformance. The Master Plan gives general policy direction, rather than dictating a single conclusion. It contains goals which are both environmental and non-environmental in nature. In their consideration of the project, decision-makers will have to consider all the various objectives and policies in order to determine whether the project, on balance, conforms to the Master Plan. This determination will be made by the City Planning Commission as part of its review of the project's Conditional Use Authorization and under the provisions of Proposition M. The staff report for the project will include an analysis of conformity with Master Plan policies as well as the staff recommendation.

COMMENT

"Direct your attention to the last objective on page 33, number 2 on page 37 and second from bottom on page 37. All talk about existing residents, which clearly include young people. By taking away a resource for kids, and substituting a tourist

oriented, expensive facility, you seem to be going against the master plan. Discuss this. Also re-review the master plan for policies that are family-oriented and discuss them. (If the master plan lacks such policies, it needs some attention.)" (Sue C. Hestor)

RESPONSE

The comments relating to the Master Plan are noted. The comments relate to a belief that the entire video/amusement facility at Pier 39 would be removed with the proposed project. In fact, as discussed on pages C&R 5-6 of this document, only a small portion of the existing amusement facility, containing an amusement called "Mindscaper" operated by one of the project sponsors would be removed and relocated elsewhere. The remainder of the existing amusement facility, including the video arcade, would remain unchanged.

Other Fisherman's Wharf Projects

COMMENT

"The Redevelopment Study to reconfigure the traffic/parking/general circulation mess. It will provide much broader information on cumulative circulation issues than that which is contained in this EIR and is designed to make policy recommendations for realigning traffic lanes, 'routing' to garages, pedestrian cross-walks, etc. That is already underway. Give a similar estimated time line for that study." (Sue Hestor)

"As you know, Fisherman's Wharf is currently a redevelopment study area. Besides the aquarium, there are many projects being discussed. The Port is proceeding with plans for expansion of the fishing industry on Pier 45 and the Hyde Street Pier, and the F-Line will be coming to the Wharf along the Embarcadero. In light of the upcoming developments and past planning mistakes, I do hope you agree that the Wharf is in desperate need of serious comprehensive planning rather than a band-aid approach." (Mary Helene Lolli)

"Most importantly, the Underwater World proposal is being promoted in the absence of a comprehensive development plan for the entire waterfront. This continued avoidance of the need for comprehensive planning creates a piecemeal approach to

waterfront development. Although this type of commercial use could be completely appropriate if properly designed and sited, this opportunistic approach to project development fails to achieve the important goals outlined in the San Francisco General Plan, The Bay Plan and several other planning documents. There should be serious exploration into the possibility of siting this project more appropriately. Exacerbating the problems of the most heavily congested tourist spot in San Francisco is not good planning." (Marc Holmes)

"Two other studies and one major transit improvement are also underway. The Redevelopment Study to reconfigure the traffic/parking/general circulation mess. It will provide much broader information on cumulative circulation issues than that which is contained in this EIR and is designed to make policy recommendations for realigning traffic lanes, "routing" to garages, pedestrian cross-walks, etc. That is already underway. Give a similar estimated time line for that study. The recommendations of that study could have major bearing on the mitigation measures (and possibly the project in chief) on the aquarium.

"The Pier 45 Study is a priority of the current administration. A fisheries institute with features that are attractive to both tourists and San Francisco residents could be scuttled if traffic is severely worsened in this area. Please provide a similar estimated time line for that project.

"Development of the F line along the waterfront is a City commitment. Although certain aspects have not yet been decided, much of it is already generally known. Please provide similar information for that project, including estimated dates when construction will be underway and when it will be completed.

"Much of the environmental information for these projects may be available prior to the completion of the approval process for the aquarium. If that occurs, the City will be legally obligated to incorporate that information into this EIR via a supplement." (Sue C. Hestor)

"In conclusion, Pier 45, which was the last big problem we had on Fisherman's Wharf with the hotel and everything is finally getting underway in a study for the fishing industry. How can we plan to do a study and then all of a sudden have this thrown at us? Can't we finish 45 and get that on the road first? They are asking you to okay an aquarium that is going to block traffic. These people are fishermen down there. We fought the last time because of this, and now we are fighting something else, which is more people and more traffic." (Joseph Alioto - Hearing)

"I would like to know what the Redevelopment Agency is studying in the area. And I would like to know why we shouldn't wait until that Redevelopment Agency study is complete before certifying the EIR.

"I am not convinced that the Draft EIR has adequately addressed the cumulative impacts of other projects in the area. I would like to know what the city has in store for the immediate area, what other projects are being proposed by private developers as well.

"I would just like to reiterate, to the extent that that study looks at the issues contained in the EIR, then it seems like we should include that information in the EIR as an analysis of the cumulative impacts." (Commissioner Morales - Hearing)

"Two days ago, Mayor Agnos unveiled a $28 million plan to upgrade the fishing facilities at Hyde Street Pier and Pier 45. A critical part of this plan is the establishment of the Fisheries and Environmental Research Center on Pier 45.

"Such a facility will be modeled after the North Sea Center in Denmark, with technological support facilities for the fishing industry as well as aquatic displays, i.e., aquariums, educational facilities for the public to find out more about commercial fishing as well the preservation of the sea.

"It will act as an information center and create a forum for diverse interests to continue to pursue vital regional and global issues such as cleaning up the bay, preservation of water resources, and the government's proposal to drill for oil off the California coast.

"The California Coastal Conservancy is currently conducting a feasibility study on the institute, which will most likely recommend that an admission be charged to cover the overhead of such a facility.

"The California Academy of Sciences, the U.S. Department of Commerce, the Natural Fisheries Services, the Whale Center, and many other organizations have expressed an interest to participate in the institute.

"I have been authorized to raise the following questions on behalf of the Pacific Coast Federation of Fishermen's Association, and Zeke Grader. Will Pier 39's aquarium undermine the feasibility of the fisheries institute on Pier 45?" (Christopher Martin)

"As the EIR clearly states on Page 71, which begins a lengthy discussion of recent and current studies going on relating to the Fisherman's Wharf area, which I presume the Planning Commission and the staff of the environmental review department are familiar with, I would like to see the EIR more adequately identify those particular issues and the impact of this project on them.

"As was just so clearly stated by Chris, the economic feasibility of this proposal on Pier 45 does depend in part on admissions charge from the public." (Nan Roth - Hearing)

RESPONSE

As noted by the commentors, there are several other projects in the area which are in the planning and environmental review processes. Those projects, their schedules, their environmental review status, and their treatment in this EIR are described below. Each of these proposals (the F-Line, the Fisherman's Wharf Development Program, the Fisherman's Wharf Seafood Center, the Fisheries Center) would be located in the same general area as the proposed Underwater World. Each of them is proceeding independently through the planning, environmental review, and project consideration processes. The environmental review for each of these proposals must consider the cumulative impacts of other reasonably foreseeable projects, as must this EIR. In other

words, all of these analyses must take into account, to the extent that information is available, the potential impacts of all of these proposals. Because urban land use is a dynamic process, with new developments and public actions being proposed, and existing uses and transportation patterns evolving over time, it is seldom possible to present a definitive, unchanging picture of cumulative impacts, based on assumptions about other reasonably foreseeable projects.

The San Francisco Public Utilities Commission is proceeding with plans for the F-Line through Fisherman's Wharf. Since preparation of Underwater World Draft EIR, a preferred alignment has been selected. It would run north on The Embarcadero to Jefferson Street, west on Jefferson Street to Jones Street, south to Beach Street, and east on Beach Street to The Embarcadero. That alignment is one of the potential F-Line routes described in the EIR on page 104, and was considered in the transportation analysis for this EIR. Because the F-Line would be financed and approved by the Urban Mass Transportation Administration, an agency of the Federal Government, it is receiving federal environmental review. An Environmental Assessment (EA) is currently being prepared and conceptual engineering work is being done. Final engineering is expected to be completed in late 1990 or early 1991 with construction completed in late 1992.[3]

The Port is proceeding with plans to develop the Fisherman's Wharf Seafood Center which would include modernized fish handling facilities on portions of Pier 45. The Seafood Center would include: 1) construction of 98 new berths at the Hyde Street Pier; 2) reconstruction of the east side of the Hyde Street Pier for a new marine fuel station, fisherman's support facilities and the Harbormaster's office; 3) rehabilitation of existing sheds on Pier 45 for fish receiving, distribution and brokerage, fish inspection and industry research, fisherman's storage and work space, and support parking; and 4) reuse of available fishing industry sheds in Fish Alley for fishermen's storage and work space.[4] This project is currently undergoing environmental review. A transportation study has been performed. The cumulative transportation impact analysis is based on the Northern Waterfront Traffic and Transportation Study, as is that for the Underwater World EIR. It does not show transportation impacts different from those presented here. The Seafood Center will be considered by the Port Commission when the environmental review is complete. This is expected to be sometime in 1989.

The California Coastal Conservancy, at the request of the State Legislature, is investigating opportunities for the establishment of a Fisheries Center or Centers at several locations in California, including at Pier 45. Because this study is intended to identify ways of enhancing the fishing industry, the Conservancy's staff is coordinating with the Port to assure that space needed for San Francisco's fishing industry will be available. The Conservancy has proposed several alternative approaches to the development of a Fisheries Center at Pier 45, for further analysis. These alternatives range from about 25,000 square feet to about 60,000 square feet, and consist of combinations of uses which the Conservancy staff believes might be feasible in terms of available space, environmental considerations, and potential financing mechanisms. The Conservancy's largest alternative consists of the following components: 1) a 20,000 square foot Ocean and Bay Center where exhibits would be displayed, 2) a 10,000 square foot Fisheries Conference Center, 3) a 5,000 square foot Fisheries Computer Center, 4) about 5,000 square feet of marine related office space, 5) a 10,000 square foot Seafood lab with test kitchens, and 6) a 10,000 square foot fisheries gear development lab. The 20,000 square foot Ocean and Bay Center is described as a public interpretive center with exhibits describing aspects of the fishing industry in the Bay and Northern California. The Fisheries Center is still in the early stages of study. The Conservancy has recommended further study of the feasibility of the alternatives which it has identified. This project is too early in the planning stages to project a time frame for approval or implementation.[5]

The Redevelopment Agency, the Department of City Planning and the Port are in the midst of a study for the Fisherman's Wharf Development Program. This study area includes the project site. A Citizens' Advisory Committee has been actively involved in the study. No Plan has yet been proposed. The study may result in amendments to the Master Plan, amendments to the City Planning Code, circulation improvements, and other public improvements such as a new underground garage in the area bounded by Jefferson, Taylor and the Embarcadero, and enhancement of the water's edge and other urban design improvements throughout the area. A Redevelopment Area may be designated in order to implement public improvements. A Draft Transportation Plan has been prepared and circulated. An Environmental Impact Report for the Program will be prepared. Certification of the EIR may occur in late 1989 or early 1990. Consideration of the Plan by the City Planning Commission, the Redevelopment Commission and the Port

Commission can occur after certification of the EIR. Implementation of any public improvements proposed would occur over the next decade.

The transportation analysis for the Underwater World EIR is based on the Northern Waterfront Traffic and Transportation Study,[6] which includes assumptions about cumulative development in Fisherman's Wharf. The analysis includes three cumulative development scenarios, which are described in more detail on page 105 of this EIR. These scenarios assumed that all sites in the study area which were identified as having some likelihood of redevelopment, because of low existing development relative to what may be permitted, would be redeveloped to more intense land uses. The Underwater World Traffic and Transportation Study (the background study for this EIR) updates the Northern Waterfront Traffic and Transportation Study, to include all information currently available, to evaluate the potential impacts of all of these proposals. Where precise information about the proposals is not yet available, this EIR incorporates reasonable assumptions about development that may occur in the future, so that decision-makers and the public will be informed about reasonably foreseeable potential cumulative impacts.

All information that has emerged since the Northern Waterfront Traffic and Transportation Study was prepared indicates that this is a conservative analysis for three reasons. First, the Fisherman's Wharf Development Program is likely to result in more restrictive land use policies in the area so that developments of the size that were envisioned in the analysis are less likely to be proposed and approved in the future. Second, the analysis did not assess the market conditions for the type of developments assumed to occur. Subsequent information indicates that the market for hotel and retail development is not likely to encourage the level of development that was assumed.[7] Three, individual developments which have been proposed since the analysis was performed have been smaller than those that were assumed in the analysis (see discussion below). As a result of these assumptions, the analysis of cumulative impacts contained in the Underwater World EIR is conservative, or likely to describe greater impacts than will actually occur.

The analysis of cumulative impacts contained in the background transportation analysis and the EIR on Underwater World makes some assumptions about development on specific sites. These assumptions have been re-examined as more specific proposals have evolved.

On Pier 45 and the Hyde Street Pier, the transportation analysis conservatively assumed that a hotel would be developed on Pier 45 and light industrial uses on the Hyde Street Pier. Currently proposed uses on these sites, including the Fisherman's Wharf Seafood Center and largest of the Fisheries Center alternatives, would be expected to generate fewer vehicle trips during the same period. Therefore, the cumulative impact analysis contained in this EIR continues to conservatively assess the likely impacts of development throughout the Fisherman's Wharf area.

The Fisherman's Wharf Development Program is currently being prepared; no proposed plan yet exists. There are two aspects of that program which have the potential to influence the cumulative impacts (particularly transportation impacts) of development in Fisherman's Wharf. First, as discussed above, the land use components of the Fisherman's Wharf Development Program are likely to result in less development, and consequently in lower cumulative impacts in the Fisherman's Wharf area. Second, the circulation improvements would improve the ability of the area to handle any given level of traffic with fewer adverse effects. The preliminary recommendations for circulation improvements are contained in a Draft Transportation Plan. Many of these recommendations, particularly those which are most likely to affect circulation in the vicinity of Pier 39, have been analyzed as mitigation measures in this EIR. As a result, the Plan is not likely to result in greater impacts from cumulative development than are presented in this EIR.

This EIR focuses on the impacts of the currently proposed project in the context of cumulative development. The EIR which will be prepared on the Fisherman's Wharf Development Program is likely to contain more detailed information about the area-wide impacts of development that are likely to occur after the Program is adopted and as a result of the public actions which would comprise the Plan. It is not likely that the Fisherman's Wharf Development Program EIR will reveal new significant environmental impacts to which the proposed Underwater World would contribute substantially.

The proposed Underwater World can be considered by the City Planning Commission and the Port Commission under current land use regulations. This EIR is intended to give the decision-makers the necessary information about likely impacts of the project and about its contribution to cumulative impacts, including other reasonably foreseeable projects.

The analysis of cumulative conditions uses reasonable, conservative assumptions about other potential future development in the area. Using this EIR and other information which will be available to them, the decision-makers may choose to approve the project, disapprove the project, or approve it with conditions, without waiting for information about other projects which may be proposed in the future.

COMMENT

"The DEIR cites the following conclusions of the Northern Waterfront Findings Report '(The Fisherman's Wharf Area is) losing its attraction because of physical deterioration and lack of an identity and unified image.' The DEIR goes on to state that 'This is due to a continued decrease in fishing related industry, contrasted with an increase in tourist-oriented businesses, with resulting traffic and parking congestion.' We can assume, therefore, that the proposed tourist-oriented project would contribute to the declining attraction of the Fisherman's Wharf area." (Marc Holmes)

"In 1987, the Department of Planning published a findings report on Fisherman's Wharf to develop a basis for future policies. The three major conclusions of that report are, and I will quote. 'One, the area is losing its attraction because of a physical deterioration and lack of identify [sic] and unified image. Two, a host of transportation problems plague the area. Traffic congestion, parking shortage, pedestrian conflicts, and balanced transit utilization, and the lack of a clear signage program need to be addressed. And, three, the fishing fleet urgently needs modern facilities.'

"Many of us are serious about addressing these issues. We are committed to making the wharf a more genuine place and less honky-tonk with a vibrant commercial fishing industry and the appropriate facilities to back it up." (Christopher Martin - Hearing)

RESPONSE

The Draft EIR has misrepresented the conclusions of The Northern Waterfront Findings Report. In fact, the report identifies that there is a perception that the Fisherman's Wharf area is losing its attraction. The report states (page 2) that "there is a strong

perception that the area is losing its attraction because of physical deterioration and lack of an identity and unified image."

Page 75, first partial paragraph, the last three sentences are deleted and replaced with the following new paragraph.

> "The report states that 'there is a strong perception that the area is losing its attraction because of physical deterioration and lack of an identity and unified image.' It further states that the Fisherman's Wharf "fishing fleet urgently needs modern facilities . . .;' that 'a host of transportation problems plague the area;' and that there are economic problems.
>
> "The report assesses a wide variety of land use issues and identifies proposed policies as remedies. The proposals include:
>
> > "Support for the development program on Hyde Street Pier and Pier 45 to address the needs of the fishing industry;
> >
> > "Support for the proposed Fisheries and Environmental Research Center;
> >
> > "Reduction of intensity of and assurance of the diversity of new development within the central area of the Northern Waterfront study area;
> >
> > "Restriction and control of the spread of tourist-commercial uses into new areas;
> >
> > "Assessment of the need and desire for new hotel rooms;
> >
> > "Prevent conversion of residential uses to commercial uses;
> >
> > "Increase the attractiveness of the area as a resource for local residents;
> >
> > "Expand residential development and promote neighborhood character; and
> >
> > "Encourage neighborhood serving businesses by promoting storefront space in new development projects.
>
> "The Report drew on consultants' analyses of transportation (described below) and of the area's hotel market."

COMMENT

"As you know, a comprehensive planning effort is underway, and potentially within the next seven years, half the land area of the Fisherman's Wharf survey area will be going through significant development. Potentially these parcels include the Clarion Hyatt Hotel, the Super 8 site, Pier 45, Pier 33 and 35, the Canazero lot, Pier 45, the

Longshoremen's property, Hazlette warehouse, the Kirkland bus yard, and other sites." (Christopher Martin - Hearing)

RESPONSE

The comment is noted.

COMMENT

"Page 87. This analysis doesn't show clearly the effects on the Fisherman's Wharf businesses and the industry as well as the future Pier 45. I don't think it tells at all how those will be affected." (Sue Bierman - Hearing)

"I don't think that the EIR points out that it's an excellent fiscal impact on the area and it would definitely be an upgrading of the wharf area." (Marsha Garland - Hearing)

RESPONSE

Economic effects of the project on area businesses is an issue for Planning Commission consideration during review of the project in relation to Proposition M and the requirements of Section 303 of the Planning Code. It is not an appropriate issue for consideration under CEQA.

Miscellaneous

COMMENT

"Ocean and Bay related commercial and public activities should be given preference over non-marine and non-maritime development proposals on the water's edge. This project qualifies for support as it is Bay related.

"THD urges the commission's use of its discretionary powers so that each new increment of commercial development at the wharf significantly upgrades our overall offering to visitors and to San Franciscans.

"The justification for displacement of any boat moorings: any reduction in public access for the enjoyment of the water, and to views of the Bay; we urge the Commission to require that the access be enhanced, not reduced new development proposals such as this one.

"THD opposes any Bay fill not allowed by BCDC." (Telegraph Hill Dwellers)

RESPONSE

The comments are noted. No Bay fill which is not allowed by BCDC will occur.

COMMENT

"The project would include office space. Nowhere does it mention whether BCDC considers this acceptable fill. Should be discussed." (Richard J. Wiederhorn)

RESPONSE

The proposed project would not include office space as a primary use. The only space which would be used for office purposes would be 3,800 gross square feet of space used for administrative offices for operation of the aquarium facility. This space would not be commercially leasable office space.

COMMENT

"The exhibit on page 32 has the wrong Port jurisdiction boundary. Correction shown on attached exhibit." (Richard J. Wiederhorn)

RESPONSE

Please see revised Figure 11 on p. C&R 26 showing corrected Port jurisdiction boundary.

COMMENT

"In describing the land use and activities of the Fisherman's Wharf area (pp. 28, 29, 75), it may be true that tourism dominates the area. However, there has been continued increases in commercial fishing activities. The Port maintains a consistent

policy of using Fish Alley properties for fishing related businesses. It is not correct to state that Port property has stopped being used for commercial fishing. San Francisco is still the largest center of fishing on the West Coast. There has been an increase in non-fishing activity in the vicinity as the City has permitted hotels and commercial activities to proliferate outside of Port property." (Richard Wiederhorn)

"p. 28: Not correct to use the term fish 'processing'; should be fish handling. Add to last sentence of first paragraph 'off of Port property.' It is not correct to state that Port property has stopped being used for commercial fishing." (Irene Nishimura)

RESPONSE

The comments are noted. The text in the Draft EIR attempts to describe the trends in land uses in the Fisherman's Wharf/Northern Waterfront area during the last few decades. During that time period, the dominance of commercial fishing as a land use has decreased as other "tourist-serving" uses have been developed in and around the Wharf area.

Page 28, the first paragraph is revised to read as follows (revisions are underlined):

"The project site is located in the Fisherman's Wharf area of the Northern Waterfront District. The site is north of The Embarcadero between Stockton Street and Grant Avenue and between Piers 35 and 41. Telegraph Hill is to the south of the project. For many years, the Fisherman's Wharf area was dominated by a combination of maritime commercial uses such as fish handling and other uses serving the San Francisco commercial fishing fleet, and other industrial uses. Since the mid-1960s, tourist-serving uses, including hotels, specialty retail complexes and entertainment establishments, have become the dominant uses off of Port property."

Page 28, the following is added at the end of the first paragraph:

"However, San Francisco is still the largest center of fishing on the West Coast and Fisherman's Wharf is the center of commercial fishing in San Francisco."

Page 29, third paragraph, the first sentence is revised to read as follows (revisions are underlined):

"In the past 40 years, San Francisco has lost its dominant maritime position in the Bay Area (primarily due to the decline of maritime industrial uses and employers) and the appearance of the Wharf has turned from that of a very active fishing port to that of an area with tourism as its primary use. However, commercial fishing continues to be a major activity around the Hyde Street pier and Fish Alley, and the

Port has maintained a consistent policy of using that area for fishing related businesses."

COMMENT

"Page 26 - Prop M mandates more than the Priority Policies. The project must also be evaluated against the Master Plan. If it cannot meet those standards, it must be disapproved." (Sue C. Hestor)

RESPONSE

It is not the purpose of an EIR to establish the basis for approval or disapproval of a project under the planning policies and codes of the City. That function is more appropriately performed as part of the project approval/disapproval process. Proposition M findings must be made as part of the approval/disapproval process. The decision-makers must make a determination of the conformance of the project to the criteria for approval under Section 303 of the Code in their findings of approval for the project, if it is approved. A staff recommendation for these findings will be contained in the Case Report prepared for the project.

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[1] A discussion of fill credits is contained in the January 17, 1989 letter from William Travis, Deputy Director, BCDC, to Mr. Fritz Arko, Pier 39, and Mr. Eric Pedersen, Questar of New Zealand, Inc. A copy of this letter is available in the project file.

[2] The accounting of net new fill involved in the project is by Joan Lundstrom, Permit Analyst, BCDC, February 16, 1989.

[3] Ron Niewiarowski, Project Manager, San Francisco Public Utilities Commission, telephone conversation, February 23, 1989.

[4] Phil Kern, Project Manager, Port of San Francisco, telephone conversation, February 27, 1989.

[5] Marc Beyeler, California Coastal Conservancy, phone conversations, February 1 and February 28, 1989.

[6] DKS Associates, Northern Waterfront Traffic and Transportation Study, March 1987.

[7] Recht Hausrath and Associates, Fisherman's Wharf Retail Market Analysis, Fisherman's Wharf Hotel Market Analysis, January 11, 1989.

C. URBAN DESIGN

Views

COMMENT

"In Chapter IV-B, Environmental Impacts--Urban Design and Visual Quality, the DEIS states that the proposed building would obstruct views of boats in the marina, views of the Bay and views of Angel Island. The DEIR also states that the structure would increase the sense of building enclosure. Yet Chapter V, Mitigation Measures state that the only measure proposed to mitigate these impacts is the use of no mirrored glass on the building.

"We find the discussion of this impact, as well as the proposed mitigation, to be entirely inadequate. The incremental walling off of the public from physical and visual access to the Bay is of deep concern to the public. Yet there is no discussion in the DEIR of the cumulative impact of several such independent projects being built along this important section of the waterfront." (Marc Holmes)

RESPONSE

The EIR has identified an impact of the project on visual quality in that it would obstruct some views of the Pier 39 marina, Angel Island and the Bay. It does not identify the potential for cumulative view blockage impacts in the project area because the proposed project is the only project currently known to the City which would block views of the Bay in the Northern Waterfront/Fisherman's Wharf area. Due to the fact that there are no other building projects anticipated on the waterfront in the project area, which would block views, there is no cumulative view blockage impact.

No mitigation has been identified for the impacts of the project due to view blockage. Since the primary views of the Bay in the project area are from pedestrian level, even a one-story building would result in blockage of views of the Bay, an impact identical to that of the proposed project. This impact is unavoidable with the project. Alternative Three would reduce this impact. Alternative One (No Project) and Alternative Four would avoid it. Alternative Two would result in a different impact. The Draft EIR does not identify view blockage as a significant impact. The final determination on the significance of this impact will be made by the City Planning Commission in its EIR certification motion.

COMMENT

"Policy 5, regarding Urban Design (DEIR, pg. 35) states that non-maritime development bayward of the seawall should be permitted only if . . .'Important Bay views along the Embarcadero and level inland streets are preserved and improved.' The Underwater World project would degrade and destroy several important Bay views." (Marc Holmes)

"THD opposes any reduction of hard won 'windows on the Bay'; and similarly, breaking any of the current height limits. This project encroaches into an established window between Piers 39 and 35." (Telegraph Hill Dwellers)

"Page 34, para 2 and page 35, para 4 - visual access and important bay views - this is exactly why you need to discuss this in the EIR. A sweeping bay view is being infringed upon. Please compare photos on pp 45 and 84 to see how just one view is being raped." (Sue C. Hestor)

RESPONSE

The comments are noted.

COMMENT

"1. The draft EIR totally fails to address the visual impact of the proposed project on the east basin of the Marina at Pier 39 (Marina). All representations within the draft EIR show the visual impact of the proposed aquarium solely from the perspective of the Embarcadero toward the water. There is no representation within the draft EIR that addresses the impact of the project from within the Marina toward the city. Therefore, the draft EIR fails to address the visual impact from the viewpoint of the owners of the condominium slips of the Marina and thus, ignores the attendant loss of view of portions of the city skyline to the Marina; which loss varies by location within the Marina. In the case of slips closest to the access roadway (docks A and B), nearly all of the views to the south would be obliterated and replaced by aesthetically unpleasing board-form concrete walls on the proposed structure. In the case of slips from a mid-point of F-dock east, and north to G-dock, the impact of the building is less; however, fully evident.

"The draft EIR contains photo montages of the proposed project taken from many angles; none of the photo montages, however, considers the effect of the proposed building on the marina slip owners or tenants. In order to adequately represent the visual impact upon the Marina itself -- a public recreational marina -- a detailed photo montage of the proposed project is required. We request that photo montages be taken from at least three points on each dock in the east Marina (docks A-G), and that the photo montages be clearly labeled and marked with the boundaries of the proposed structures and roadway. Each photo montage should be clearly labeled to show the slip number from which the photo was taken. Photo should be taken from the dock at no less than five feet (5') elevation above the dock's surface, and not to exceed six feet (6') in elevation." (Robert W. Pickard)

"The visual aspects of the proposed building are not reviewed in the EIR from the point of view of people with boats. We are going to be sitting ten feet below the level of the pier on our boat, looking up at this 40- to 50-foot high building, which is going to seriously interfere with our view.

"But although there are drawings in the EIR from many other angles, there is nothing from the waterfront." (Roy Mollard - Hearing)

RESPONSE

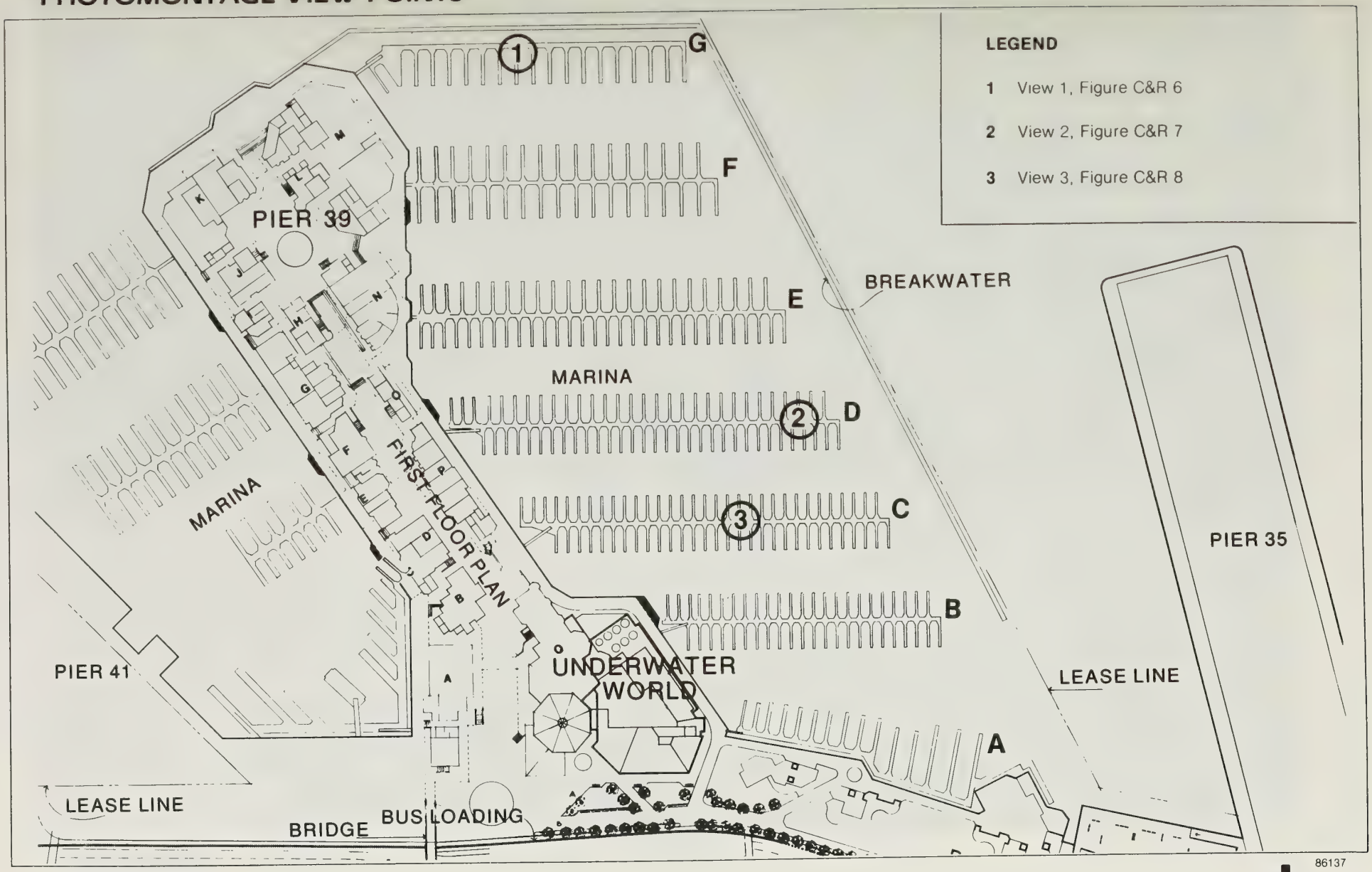
The comments are noted. In response to the request of the commentors, additional analysis of visual impacts on boats in slips in the Pier 39 marina (east basin) has been prepared and is included in this document. Three additional photomontages have been prepared from the vantage point of the marina and are included on the following pages as Figures C&R-6, C&R-7, and C&R-8. Figure C&R-5 shows the view points from which the photographs were taken.

COMMENT

"The second point that we are concerned about is the justification for displacement of any boat mooring, access to the general public's enjoyment of the water and views of the bay. We are concerned that a very hard won window on the bay to the east of Pier 39 is encroached upon and would suggest that the development be reviewed very sternly in regard to that." (Rod Freebairn-Smith - Hearing)

PHOTOMONTAGE VIEW POINTS

FIGURE C&R 5



SOURCE: EIP ASSOCIATES

FEET 0 100 200

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PHOTOMONTAGE: VIEW 1 LOOKING FROM MARINA

FIGURE C&R 6

SOURCE: SQUARE ONE FILM AND VIDEO

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RESPONSE

The comment is noted.

COMMENT

"Page 40. Confusing caption. Should read: 'View Looking Northeast from Pedestrian Bridge toward Pier 39 Entrance.'" (Irene Nishimura, Port of San Francisco)

RESPONSE

Page 40, Figure 12, the title is revised to read as follows (revisions are underlined):

"Project Area Photo: View Looking Northeast from Pedestrian Bridge Toward Pier 39 Entrance"

Project Appearance

COMMENT

"Page 37, para 3 - what about height? Is the Department not going to deal with this issue [sic] This is a severe increase in height close to the Embarcadero." (Sue C. Hestor)

RESPONSE

The EIR describes the height of the proposed project in the project description; evaluates the height against the requirements of the City Planning Code in the Land Use and Zoning section; and evaluates the height of the proposed building in relation to urban design and visual quality issues in that section of the document.

The commentor makes reference to Objective 3, Policy 6 of the Urban Design Element of the Master Plan which states: "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction."

The EIR documents, on page 76, that the project as proposed would conform to the requirements of the 40-X Height and Bulk District. The EIR goes on to state, on page 78, that the proposed project, at 40 feet high with a 10-foot elevator penthouse, would "be similar in height to other buildings in the Pier 39 complex." The City Planning

PHOTOMONTAGE: VIEW 2 LOOKING FROM MARINA

FIGURE C&R 7

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SOURCE: SQUARE ONE FILM AND VIDEO

eip

Commission will consider the building's size and design during its deliberation on the project's conditional use authorization.

COMMENT

"The project design has several features that are questionable for the site. The use of glass block is not a waterfront material and would be completely foreign to Pier 39's existing materials." (Richard J. Wiederhorn)

RESPONSE

The comment is noted.

COMMENT

"6. The draft EIR fails to address or consider the impact arising from the lack of aesthetic appeal of a board-form concrete structure on the view from the Marina. Coincidentally, this same raw view of concrete would be imposed on patrons of the shopping center who utilize the access roadway as a promenade." (Robert W. Pickard)

"From the rear deck of my boat, where we sit out to eat, we will be faced with a forty foot high building. The base of the building is several feet above the level of my deck, many feet above it at low tide. The EIR totally ignores the visual impact on the Marina tenants. Not only will we be faced with the bulk, we will also be faced with the ugly side of the building and its' mechanicals. Furthermore, we suffer an increased loss of privacy due to unwanted spectators admiring our life-style from the proposed pedestrian overlooks. It is difficult to mentally picture the amount of City skyline that will be blocked by this building, I do quite a lot of entertaining on my boat, and the effectivity will be diminished if the view is spoiled." (Roy S. Mollard)

"The huge 'blank': east face of the aquarium is not in keeping with an objective to improve aesthetic building facades." (Richard J. Wiederhorn)

RESPONSE

Since the publication of the EIR changes have been made to the proposed design of the east wall of the proposed aquarium facility. This side of the building, described in the EIR

PHOTOMONTAGE: VIEW 3 LOOKING FROM MARINA

FIGURE C&R 8

SOURCE: SQUARE ONE FILM AND VIDEO

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as "board form concrete and wooden fencing" would continue to be constructed of board form concrete but the design would contain articulation and facade materials which mimic service entry bays along many other piers in the Northern Waterfront area. Photomontages showing the proposed building from the Marina are on pages C&R-58 through C&R-60 (Figures C&R 6 to C&R 8).

COMMENT

"It is not correct to say all buildings in the Pier 39 complex are two stories; Mr. Arko's office is on the third floor, as are other areas." (Irene Nishimura, Port of San Francisco)

RESPONSE

Page 39, first paragraph, the third sentence is revised to read as follows (revisions are underlined):

"Within the Pier 39 complex, buildings are two <u>and three</u> stories and range between 30 and 40 feet <u>in height</u>."

COMMENT

"Page 78. Second sentence, last paragraph, how can this conclusion be supported? See Figures 23 and 27." (Irene Nishimura)

RESPONSE

Page 78, last paragraph, the second sentence is revised to read as follows (revisions are underlined):

"The structure would appear to be <u>similar</u> in height and of <u>similar bulk as</u> the adjacent octagonal building."

COMMENT

"<u>Page 39</u> - Description of land uses in area too general. Talk about along the waterfront specifically. Description of Pier 39 is misleading. The structure being

demolished has low-scale 'wings' which reduce the height/visual impact close to the water. Look at p. 45." (Sue C. Hestor)

RESPONSE

The description of land uses on pages 39 and 47 is included to provide a background to the visual character of the Northern Waterfront area. A more detailed description of the immediate project vicinity, including the immediately adjacent Pier 39 buildings, is on page 47. The "low-scale wings" of the Octagonal Building referred to by the commentor are described as a "long sloping roof" in the EIR. This description, in conjunction with the photographs of the site, adequately depict the architectural character of the structure.

COMMENT

"Page 47, para 2 - Pedestrian environment also includes direct access to the water which will be compromised. This page in general needs to discuss the new bulk which will be added. It is too optimistic." (Sue C. Hestor)

RESPONSE

It is not clear what the commentor means by "direct access to the water." The discussion on pages 47-48, and the accompanying photographs, describe the visual environment of the Pier 39 area, particularly the project site. Views of the Bay, a form of "visual access" to the Bay, are fully described and illustrated. As this discussion is included in the Environmental Setting section of the EIR, it would not be appropriate to discuss the added bulk of the project which is more appropriately described in the Environmental Impact section. This discussion is included on page 86 of the EIR.

COMMENT

"The hiring of highly qualified design firms to prepare any change to prominent port leases, most particularly the piers and the promenade properties. We believe the Aquarium's sponsor has done that, and applaud their choice." (Telegraph Hill Dwellers)

RESPONSE

The comment is noted.

D. TRANSPORTATION

Trip Generation and Mode Split

COMMENT

"They also assume that after Year 1, the visitor usage or the visitor patronage to the aquarium will drop. They use as comparisons the Monterey Bay Aquarium and Africa-Marine World U.S.A.

"We are in Fisherman's Wharf, and there are other attractions there besides the aquarium, the potential aquarium. I think a better comparison might be used, is the Alcatraz or the Red and White Alcatraz run which in the last several years has increased in people. And I think that would seem to be a better analogy or comparison in terms of what we are comparing things to." (Nunzio Alioto - Hearing)

"The logic and the methodology used in developing the demand analysis are not always clear to the lay reader. Furthermore, the analysis depends on critical assumptions that need to be further evaluated. For example, the DEIR compares Underwater World to 'similar aquariums' (p. 87) in arriving at attendance trends, although Underwater World and the Monterey Bay Aquarium differ significantly both physically and conceptually. Why should we assume that the two attractions will experience the same attendance trends? Underwater World might, in fact, draw more visitors than the others. The analysis also assumes that aquarium visitors will leave the area almost immediately after visiting the attraction." (M.K. Veloz)

RESPONSE

Attendance would be composed of two basic groups, tourists to the Bay Area and Bay Area residents. The attendance projections assume that residents would be more likely to visit the Wharf area specifically to see the new aquarium in the initial year because of publicity surrounding its opening and the novelty of the attraction. Over time the aquarium would be less of a specific draw for residents. Thus the share of total attendance due to Bay Area residents is projected to decline after the initial year. The percentage of tourists who would visit the project, on the other hand, is projected to remain constant. Tourism to the Bay Area is projected to grow over time; therefore the

proportion of Underwater World attendance due to tourists is also projected to increase. However, the projected decrease in Bay Area resident patronage is larger than the projected increase in tourist patronage, which results in a decrease in total attendance over the first years of operation. These are reasonable and conservative assumptions. These patterns have been observed at other new attractions.

Attendance records of the Monterey Bay Aquarium and Marine World Africa USA were used in order to develop conservatively high attendance projections for the number of new trips to the proposed Underwater World. Both these facilities are large, regional attractions which draw substantial numbers of visitors who would not otherwise visit the area. The Alcatraz tours and the Red and White Fleet are seen more as an attraction within the Wharf, and are less likely to draw a large share of patrons who visit specifically for these attractions. Underwater World projections based on individual Wharf attractions would result in fewer projected new trips, because a greater share of the projected attendance would be linked trips made by people already in the Wharf area. Consequently, the expected impacts of the project (which would primarily be caused by new trips attracted to the area specifically for the proposed project), would be less if projections were based on other existing Wharf attractions.

COMMENT

"The tourist penetration rate for Northern Waterfront visitors would substantially exceed the rate for non-Northern Waterfront visitors.

"The DKS report cites statistics indicating that, of the present tourist market, 80% currently visit Northern Waterfront attractions during their stay in San Francisco, while 20% do not. However, the tourist penetration rate for Underwater World, 14.5%, is assumed to be the same for both Northern-Waterfront-visiting tourists and tourists who do not visit the Northern Waterfront.

"In other words, the methodology implies equal penetration of the two segments of the tourist market without regard to current tendencies to visit the Northern Waterfront area. Normally, in market analysis one would expect much higher penetration or capture rates with respect to individuals already visiting the Northern

Waterfront than would be obtained among those not in the Northern Waterfront area. Tourists already visiting the Northern Waterfront would be much more likely to add Underwater World to their San Francisco itineraries than would those not visiting the Northern Waterfront.

"The fact that current Northern Waterfront visitations is so high testifies to the strength of its appeal. On the other hand, those not now visiting the Northern Waterfront probably have a high level of resistance to doing so which would also affect their likelihood to visit Underwater World. This 20% of tourists may, for example, be business travelers, to whom visitation of places of tourist interest may be a very low priority. To say that this group would visit Underwater World in the same proportion as the 80% who have already shown an interest in Northern Waterfront attractions violates common sense. The actual penetration rate among the 20% of tourists who are non-Northern-Waterfront-visitors is likely to be far less than the 14.5% figure used in the transportation analysis. Thus, the number of new tourist visitors attracted to the Northern Waterfront annually appears to be overstated.

"This same point can be made with regard to residents: one would expect much lower penetration of that segment of each market which does not now visit the Northern Waterfront area. As the share of market penetration rises, the ability to achieve further capture declines. This is not reflected in the analysis, resulting in substantially higher projection of net new trips than is likely." (Roberta Mundie)

"To the extent that market penetration rates overstate the potential attraction of Underwater World to visitors who do not presently come to Fisherman's Wharf, there is an overstatement of new trips to the area.

"The daily attendance estimates for Underwater World are composed of two separate components: patrons who are part of the existing Fisherman's Wharf tourist market, and new persons who are drawn specifically to visit Underwater World. The EIR assumes that 20 percent of the tourist trips and 40 percent of the resident trips to Underwater World during the peak weekend of the Initial Year are net new trips.

This information is based on the results of a study on the impacts of tourism on San Francisco conducted by ERA for the San Francisco Planning and Urban Research Association (SPUR) in August, 1987. The study assumes that Underwater World will be equally successful in attracting those San Francisco visitors who don't visit Fisherman's wharf as those who do." (Hans Korve)

RESPONSE

The comment is noted. It is likely that the project would achieve a greater market penetration rate for visitors and residents already visiting the Northern Waterfront than for those who currently do not visit the area. It is also likely that the project would be able to attract a percentage of the visitor population that currently does not visit the Wharf area, and a larger percentage of the resident market that does not visit the Wharf. The application of equal penetration rates to the two segments of the visitor and resident markets (Northern Waterfront visitors and non-Northern Waterfront visitors) ensures that the resulting trip estimate represents the highest that would be likely to occur in terms of new trips.

COMMENT

"We believe that the overall penetration rates that were used in the analysis are quite optimistic. The penetration or capture rates for various submarkets were based on the first year experience of the Monterey Aquarium. We think that that disregards the fact that there is an abundance of other attractions here in San Francisco which make the environment for new visitor attractions highly competitive here and that that factor needs to be taken into account when considering the market for this facility.

"The effect of the methodology that was used is to overstate the annual share of new trips among total trips to the facility." (Roberta Mundie - Hearing)

"The DEIR would be more informative and provide a better context for its analysis, particularly of parking and traffic impacts, if it made reference to the fact that over 10 million people a year visit Pier 39, with even a higher number visiting the entire Northern Waterfront and Fisherman's Wharf area. Obviously, the attendance

expectations for Underwater World, and even its maximum capacity, represent only a small percentage of the total attendance levels at Pier 39 and in the Northern Waterfront area. As a result, most of the attendance is expected to be from persons already visiting the area due to the number of attractions already present. Inducement of new visitors is neither needed for economic reasons nor likely, especially during the peak summer season which is of primary concern for impacts." (John Sanger)

"The northern waterfront area currently has a visitor volume of such a scale that only a fraction of those people are needed in order to meet the capacity of Underwater World.

"The analysis overlooks the fact that Underwater World's logical market is among current northern waterfront visitors." (Roberta Mundie - Hearing)

"To put things in perspective, Underwater World need attract attendance from only about 20% of those already visiting the Northern Waterfront today in order to exceed capacity." (Roberta Mundie)

RESPONSE

The EIR traffic analysis assumes that most project visits would be made by people who would visit the Northern Waterfront whether or not Underwater World exists. An estimated 69% of the total initial year project attendance would be such linked trips, with the remaining 31% representing visitors coming to the Wharf area specifically to see Underwater World. It is true that the project would not need to attract any new patrons beyond roughly one-fourth of the number of people already visiting Pier 39 to reach its estimated maximum unconstrained demand of 2,774,000. However, it is reasonable to assume that the project would attract additional visitors who would not otherwise visit the Wharf. The share of annual attendance projected to be new trips in the initial year, 31%, is a conservatively high estimate based on the upper end of market penetration rates achieved by the Monterey Bay Aquarium in its initial years. As the novelty of the aquarium fades (as with Monterey Bay Aquarium), demand would fall from initial year estimates and a greater share of attendance would be attracted from those already

coming to Fisherman's Wharf. The result would be lower (fewer) traffic impacts than analyzed in the EIR.

The project would attract the majority of its patrons from the millions of current Northern Waterfront visitors. It would also be likely to attract new visitors to the Northern Waterfront. The analysis in the DEIR addresses the issue of new and existing trips on page 89. The intent of the traffic study was to analyze the maximum potential of the project to attract new visitors to the Northern Waterfront.

COMMENT

"The overestimation of tourist penetration rates results in an overstatement of 'new' (project-induced) trips during the peak period.

"As compared with tourists, who are in San Francisco on leisure time and have less first-hand information about traffic congestion and peaking patterns, residents who visit the Northern Waterfront would be much less likely to do so during Northern Waterfront peak periods.

"However, the transportation analysis does not adjust for the reduced propensity of residents to travel to the Northern Waterfront during periods of greater congestion (i.e., the peak month, August, and the peak weekend day in August). Therefore, the peak period estimate in the transportation analysis includes far too many resident trips, whereas in fact, during the peak period, visitation will be heavily, if not exclusively, composed of tourists.

"This factor is important in the impact assessment because 'new' tourist trips are a lower proportion of total tourist trips than 'new' resident trips are of total resident trips. While overall the transportation analysis implies that about 30% of all Underwater World trips would be 'new' trips, if we take the more realistic perspective that residents would avoid visiting at peak periods, then the proportion of 'new' trips during the peak is considerably lower (20%, or less if more appropriate penetration rates for tourists who are not presently attracted to the Northern Waterfront are applied).

"While there undoubtedly would be higher penetration of an as yet untapped resident market by the facility than of the tourist market, one anticipates the capture of resident attendance would be more heavily weighted toward the non-peak season, and capture of the tourist market the opposite.

"The third point I want to make is that the overestimation of tourist penetration rates results in an overstatement of new trips during the peak period. That is because the transportation analysis does not adjust for the fact that residents are much less likely than tourists to travel to this facility during peak periods. Residents have information about the timing and the character of congestion in the northern waterfront in order to avoid travel there during those time periods. Thus, the portion of new trips during the peak would be substantially less than the proportion of new trips on an annual basis." (Roberta Mundie)

"Recent data collected for the Northern Waterfront Traffic and Transportation Study reveals that patrons in the Fisherman's Wharf area make an average of 9.6 stops per trip. This indicates a much higher level of linked-trip activity among retail facilities at Fisherman's Wharf, where an average of 10 percent of all trips generated is made from an external location to the area. Based on this information, it appears that the level of new trips projected by DKS on the basis of city-wide visitor data is overstated considerably." (Hans Korve)

"Overall penetration rates applied in the transportation analysis appear optimistic.

"Penetration rates (tourists, 14.5%; primary residents (within one hour travel distance), 27.5%; and secondary residents (one to two hours distance), 12.6%) are based on those of the Monterey Aquarium in its first year of operation.

"While these rates might be reasonable in an environment in which significant attractions are relatively few, taking into account the Bay Area's wealth of attractions for visitor and resident alike, these rates seem quite high. While Underwater World is undoubtedly an attraction, it will operate in a context of abundant possibilities for both tourist and resident activities. This competitive

environment is not adequately reflected in the penetration rates chosen for the analysis.

"Of the other facilities described as being marine-related attractions in the background traffic and transportation study, almost all are shown to have substantially lower annual attendance than is projected for the facility, although all of the other facilities are significantly larger." (Roberta Mundie)

RESPONSE

The opinion that residents would be less likely than visitors to attend the project during peak periods is put forth without any evidence or documentation to support the claim. Without documentation to the contrary, it is consistent with a conservative methodology for the analysis of project impacts to assume that residents and visitors would have similar attendance patterns.

The market penetration rates from the Monterey Bay Aquarium represent the best available data regarding the potential drawing power of large marine-related attractions. Monterey Aquarium attracted over two million visitors in its initial year, indicating a very large demand for marine-related attractions. While the Monterey Bay area may have fewer tourist attractions than the Bay Area, it is still a very popular tourist destination, and was before the aquarium was built. Because of this it was felt that Monterey Bay Aquarium provided a good model to base penetration estimates for Underwater World. Even if the penetration rate in the study was higher than it would be at Fisherman's Wharf, it would result in a conservative (high) estimate of the project's traffic and transportation impacts.

COMMENT

"A standard daily estimate of patronage would show a variable demand with lower attendance during the early morning and late evening hours. This is similar to activity at the Pier 39 garage, where the average hourly volume is 60 percent of the peak flow.

"The peak hour estimate for weekend days is overstated further due to application of a peak hour factor suitable for variable attendance to a daily total based on a constant maximum hourly attendance." (Hans Korve)

RESPONSE

The estimated peak hour attendance is based on the maximum daily capacity of the project. This provides a conservatively high estimate of daily attendance, because attendance would be likely to fall off during the morning and evening hours. This approach was used for the EIR to estimate the worst case impact of the proposed project. The peak hour percentage is taken from arrival patterns at the Pier 39 garage, which, as the largest parking garage in the Northern Waterfront, provides a good indication of overall Wharf visitor arrival patterns. The application of a peak hour percentage based on variable attendance to a fixed, non-variable daily total accounts for the fact that visitors' arrival time would not necessarily be dictated by the admission time indicated on their ticket. Many patrons would visit other Wharf area attractions before and after visiting the aquarium.

COMMENT

"We question the methodology and mitigations proposed for transportation and parking. Specifically:

"a: The report acknowledges that the demand, or number of people wanting to go to the aquarium will exceed its capacity, so a 'timed ticket' approach will be used allowing only 900 visitors an hour to enter. thus the report concludes, it is sufficient to do the traffic impact analysis on this 'constrained' number, not the actual demand." (Richard Weiderhorn)

RESPONSE

The analysis of project impacts assumes that project attendance would be restricted through timed ticketing to no more than 900 visitors per hour. However, the analysis of project impacts is based on a conservatively high calculation of daily project attendance of 900 people per hour over 14 hours, or 12,600 daily visitors. It is very unlikely that the

project would be able to sustain this level of attendance throughout the day. Additionally, this represents initial year operation which would not likely continue three to six years after completion of the project (attendance levels would fall off similar to conditions which occurred at Monterey Bay Aquarium). Using this figure for daily attendance, an unconstrained peak hour attendance percentage was used to estimate the number of peak hour visitors. Using this conservative methodology, peak hour attendance is estimated to be 1,360 visitors, which is 50% greater than the capacity of the aquarium. Thus, while the number of daily visitors is based on the capacity-constrained maximum of 900 hourly visitors, the traffic analysis is based on the application of an unconstrained peak hour percentage to the maximum daily attendance in order to reflect the arrival patterns of Wharf visitors. Project patrons would be likely to stay in the Wharf area longer than the time required to visit Underwater World, either by arriving earlier than their scheduled admission time or staying later once through the aquarium. The use of the unconstrained peak hour percentage reflects the attendance pattern of Wharf visitors in general.

COMMENT

"The peak hour evaluated for the initial year is the highest hour of attendance anticipated for the life of the project. The peak hour projections for the initial year are beyond those which might be considered a typical "worst case" analysis, such as the 30th highest hour of the year." (Hans Korve)

RESPONSE

The transportation analysis is based on peak weekday and weekend attendance during the project's initial year, which would be the year of highest attendance demand. However, the attendance actually used for the analysis of project impacts is based on the capacity-constrained maximum daily attendance of 12,600 visitors. Based on the conservative analysis of the project's potential market share, this level of attendance demand could be exceeded on several summer weekend days; however, the facility could not physically accommodate any additional demand above 12,600 visits per day. The use of the maximum capacity-constrained attendance for analysis of project impacts represents potential attendance on a number of days, not only for the single summer day with the highest attendance of the year. Because of this, the analysis was based on this peak condition. Other conditions over the year would have less impact on the transportation system.

COMMENT

"The parking and traffic analysis overstates the daily impacts of the project on weekends by assuming 100 percent occupancy from 10:00 a.m. to midnight. It is very unlikely that an midnight you can have as many people in a place as you do at, say, noon or something like that.

"The standard daily estimate or patronage would show a variable demand with a lower attendance to the early morning and late evening peak hours." (Hans Korve - Hearing).

RESPONSE

The methodology used to assess peak hour transportation impacts was based on applying a peak hour attendance factor to the maximum foreseeable daily attendance. To ensure a conservative analysis of project impacts, the daily attendance used was the project's maximum daily capacity of 12,600, i.e., the 900-person hourly capacity extended over 14 hours. (No Pier 39 attractions are open longer than 14 hours.) Should lower attendance actually occur, the transportation impacts would be less than those identified in the EIR.

COMMENT

"The amount of people that they can turn over within an hour period -- approximately 900. I have been told verbally by the people, by the sponsors, that in fact they can turn over anywhere from 300 to 450 people in an eight-to ten-minute period. My calculations show that a potential of 2,500 people can possible be turned over in one hour.

"I understand that they are saying that will only allow in 900 people in one given hour. But what happens to the people that are outside waiting to get in? What do we do with them? What do we do with their cars?" (Nunzio Alioto)

RESPONSE

- The project's hourly capacity would depend on the number of people that could be accommodated in the moving walkway which would revolve under the aquarium.

The moving walkway would be three feet wide by about 400 feet long, and would make about seven revolutions per hour (a rate of 47 feet per minute, or .8 feet per second). Assuming six square feet per person on the walkway, 1,400 people could be accommodated per hour. However, based on experience at the Underwater World facility in New Zealand, each visitor to the aquarium would be expected to remain in the tank area for approximately 25 minutes. This average length of stay leads to a maximum capacity for the facility of 960 visitors per hour. A capacity of 900 visitors per hour was used as a maximum reasonable capacity. To handle 2,500 people per hour would require almost doubling the speed of the walkway, forcing patrons on the stationary platform to walk at the same speed and direction as patrons standing on the movable walkway, reducing the allocated space per person almost in half or some combination of these measures. Most patrons would find any of these conditions unacceptable, and the project sponsor is not willing to operate the facility in such a fashion. The project would not operate at a capacity greater than 900 visitors per hour. This is called out as a mitigation measure in this EIR and would be a Condition of Approval.

The upper limit of 900 visitors per hour would be enforced through advance sales of time-specific admissions tickets, which would tend to spread the attendance throughout the day. The EIR provides a conservative analysis of actual arrival and departure patterns by assuming 150% of maximum capacity, i.e., 1,360 visitors leaving the project and 1,360 arriving during the peak hour. This accounts for both visitors arriving earlier than their scheduled admission time and those who would not leave the project vicinity immediately after exiting from the project. The parking and pedestrian impact analyses were made using the same assumptions for arrival and departure patterns, and thus account for people waiting to get in.

COMMENT

"The E.I.R. assumes that 40 percent of resident trips and 20 percent of tourist trips (or an average of 31%) to Underwater World are newly generated trips, based on a SPUR survey for all San Francisco visitors. By contrast, survey data for Fisherman's Wharf indicates that an average of 10 percent of all trips generated are made from an external location to the area. This results in a substantial overstatement of new trips generated to the area, especially during the peak tourist season." (Hans Korve)

RESPONSE

The new trip estimates for visitors and resident trips assume that the project would be able to attract San Francisco visitors and residents who do not currently visit the

Northern Waterfront. In this sense the number of new trips may be conservatively high. The entire transportation analysis is intentionally conservative due to the uncertainty associated with estimating the attendance and resulting traffic impacts of a land use for which data is limited.

The Fisherman's Wharf survey information referred to in the comment indicates that 10% of the trips to the Northern Waterfront are externally generated, i.e., made to a specific attraction. The proposed project would likely attract a significantly higher percentage of destination trips than most of the hundreds of existing attractions in the Fisherman's Wharf area. The average 31% new trips represents the best estimate using available research and data.

COMMENT

"The demand analysis is of critical importance in determining the project's transportation impacts; therefore, a more detailed description of it should be incorporated in the EIR." (Peter Martin)

RESPONSE

A detailed description of the transportation demand analysis is available in Chapter 3 of the background traffic study for the EIR (City and County of San Francisco, Department of City Planning, Underwater World Aquarium at Pier 39: Traffic and Transportation Study, by DKS Associates, July 1988, hereinafter referred to as the background traffic study). This study was referenced in the DEIR and has been publicly available at the Department of City Planning since July 1988, and a copy was given to the commentors. Pages III-1 through III-16 provide a full description of the demand analysis. CEQA Guidelines Section 15147 state "placement of highly technical and specialized analysis and data in the body of an EIR should be included through the inclusion of supporting information and analyses as appendices to the main body of the EIR." The introduction and summary of the demand analysis in the background study are presented below.

The basis of the traffic impact analysis for Underwater World is the determination of attendance demand. From this, the amount of new vehicle trips, transit riders, and parking spaces needed can be estimated for the project. The background study assessed

potential attendance from a market perspective (unconstrained demand) and a capacity basis (the number of people that could fit in the aquarium each hour, and over the course of a day). Detailed analysis was performed to estimate both attendance demand and capacity, on a daily and hourly basis. While the actual patronage of the aquarium could not be greater than capacity, if unconstrained demand greatly exceeds capacity, traffic impacts such as those experienced for the opening of the Monterey Bay Aquarium could occur.

Where attendance demand exceeds capacity, the need for pre-sale/timed ticketing would become a necessary mitigation. However, in time (three to five years after opening) as attendance stabilizes or falls off the need for all tickets to be sold in advance would be reduced. As an example, if attendance in four years falls below capacity, the traffic impacts of allowing walkup sales of tickets to infill available capacity would not exceed those identified in the EIR and background study, as long as the total number of tickets sold including infill ticket sales does not exceed the capacity of the aquarium.

The transportation analysis is predicated on the assumption that the facility would be open no longer than 10:00 AM to midnight on weekdays and weekends (the hours of restaurants at Pier 39; shops and other attractions close at 10:00 PM). Daily attendance projections were developed based on these operating hours, and were in turn used with patterns of arrival and departure to and from the Northern Waterfront to develop projections of peak hour attendance. The peak hour projections were used for the analysis of traffic impacts. Thus, the peak hour traffic impacts are related both to the total daily attendance of the project, and to visitor arrival and departure patterns in the broader Wharf area.

Attendance at aquariums and other similarly large, unique attractions generally peaks in the first year, stabilizing after three to five years. Potential attendance at the proposed aquarium would be a function of the market penetration into the resident market and the tourist market based on research and analysis of other aquarium facilities. The basis for attendance in this analysis is market penetration data from the Monterey Bay Aquarium.

Actual market penetration rates from a comprehensive three-year zip code survey of visitors to the Monterey Bay Aquarium were used to compare estimated and actual market penetration rates. The actual attendance and market penetration rates at Monterey in the initial year far exceeded both the initial estimated market penetration rates and the high end of the range of potential penetration rates considered in the feasibility study for the Monterey Aquarium. The actual market penetration rates for the Monterey Aquarium were incorporated into the analysis of the project.

Measures to control the project's attendance demand would be very important in the initial years of the project. The transportation analysis for the project is predicated on the assumption that an advance ticketing policy similar to the policy used at the Monterey Aquarium would be used in the initial years (one to five years). Such a policy would limit the daily attendance to 12,600 visitors, which is a conservatively high estimate of the upper limit of the facility's capacity based on hours of operation from 10:00 AM to midnight. With no attendance controls in place, the proposed project would have the potential to generate over 56,000 trips per day on weekends, and over 25,000 trips per day during the week. The estimated maximum weekday demand would be less than the maximum capacity; thus the projected demand was used for the weekday analysis. However, the estimated unconstrained weekend demand would exceed the capacity of the aquarium, and would generate serious transportation impacts throughout the Northern Waterfront Area without controls to limit the daily attendance to the capacity of 12,600 visitors.

COMMENT

"The comparison between 'similar aquarium attractions' (DEIR Page 87 and Traffic Study various references) should be more carefully described. It is unrealistic to compare projects as different from the proposed project as those chosen for the comparison.

"For example, Marine World/Africa USA is a huge recreation area location in an area with few complimentary [sic] tourist attractions. It is not 'similar' to the proposed project, a small aquarium located in the heart of one of the most popular tourist attractions in the USA. The unconstrained demand estimates are not shown to be

conservative by the comparison provided in the Traffic Study on Pages III-11 and III-12. (See DEIR on Page 87 as well.)" (Peter Martin)

RESPONSE

The analysis of transportation impacts is generally performed using the best available information. The "similar attractions" listed in the EIR, p. 87 and on pages III-12 and III-13 of the background traffic study are varied, and not all are strictly aquariums, but all are tourist attractions related to marine life. The long list of similar attractions was used as a reality check on findings developed in the transportation analysis. Most of the key assumptions were developed from data collected at Monterey Bay Aquarium. It was felt that by basing the analysis on a number of such attractions, the importance of specific differences among the attractions would be minimized.

The unconstrained demand estimates are conservative, in the sense that the estimated project impacts are "worst case." In Table 4 on page III-11 of the background traffic study, the estimated maximum attendance under unconstrained demand for the project is substantially higher than even Marine World Africa USA, which is, as noted in the comment, a huge recreation area in comparison with the proposed project. Marine World Africa USA attracted 14,100 visitors on the busiest weekday in 1987, and 19,800 on the busiest weekend day. In comparison, the unconstrained weekday demand for the proposed project is 12,500 visitors, and 28,000 visitors for the peak weekend day. These estimates are 11% lower and 29% higher, respectively, than the actual peak attendance figures for Marine World Africa USA.

COMMENT

"On Page III-14 the following figures of person trips are presented:

Initial Year - Weekday, PM Peak: 2,350

Initial Year - Weekend, PM Peak: 2,720

Future Years - Weekday, PM Peak: 1,900

Future Years - Weekend, PM Peak: 2,720

"How exactly were these figures determined?" (Peter Martin)

RESPONSE

The person trip figures on page III-14 of the background study were obtained by multiplying the daily attendance by the peak hour attendance factor. The derivation of the daily attendance estimates and the peak hour attendance factor is documented in Chapter 3 of the background traffic study.

For the estimated weekend attendance, the facility's maximum daily capacity was used, since the unconstrained weekend demand for both the initial year and 2005 is greater than capacity. The maximum daily capacity, 12,600, was multiplied by a 10.8% peak hour attendance factor (12,600 visitors x 0.108 x 2 trips - in and out - per visitor = 2,720). The peak hour attendance factor is based on a Wharf area pedestrian intercept survey taken in March, 1986 and cited in the background study.

Similarly, the weekday attendance figures were calculated using the estimated initial year and 2005 peak weekday attendance, both of which were less than the maximum daily capacity, and a weekday peak hour attendance factor. The peak daily attendance figures used were 12,500 visitors for the peak initial year weekday, and 10,100 visitors for the peak 2005 weekday. These figures translate to 25,000 and 20,200 two-way person trips, respectively (one trip in and one trip out per visitor). The weekday peak hour attendance factor, 9.4%, is based on arrival and departure data for the Pier 39 garage during peak summer weekdays in 1987, and represents the percentage of daily visitors to Pier 39 arriving during the garage's busiest hour. Visitor arrival patterns at the Pier 39 garage, the largest parking garage in the Fisherman's Wharf area, were felt to be representative of the Wharf area as a whole. The calculations were as follows:

1. Initial Year: 25,000 person trips x 9.4% = 2,350 peak hour person trips.
2. Year 2005: 20,200 person trips x 9.4% = 1,900 peak hour person trips.

COMMENT

"In estimating the above trip generation figures, was any consideration given to the fact that unmet weekend demand might be shifted to weekdays?" (Peter Martin)

RESPONSE

The potential for unmet weekend demand to shift to weekdays was not assessed. Such a shift could occur; however, it would be difficult if not impossible to quantify such a shift beyond a purely speculative level. Additionally, it is highly unlikely that any substantial shift from weekend to week day would occur for the following reasons: 1) local residents attracted on weekends work or attend school on weekdays; 2) most tourists' plans are fixed and do not provide great flexibility in scheduling.

COMMENT

"Was the fact that patrons might travel to the aquarium without realizing that advance tickets were required, then purchase tickets for another day, thus causing twice the number of trips? This currently takes place with patrons of the limited capacity Alcatraz tours adjoining Pier 39." (Peter Martin)

RESPONSE

The potential for visitors to make an extra trip to purchase tickets was not explicitly analyzed. The Red and White Fleet, which markets tours to Alcatraz that must be purchased with time-specific tickets, sells the majority of its tickets through Ticketron.[1] However, during the peak summer months many people buy tickets at the Wharf for tours the following day. Similar trends could be expected for the project. However, the trip making estimate was intended to be conservative to address such conditions. For example, during the peak hour of the initial year 2,350 and 2,720 person trips were projected for weekday and weekend conditions, respectively. Only 900 people an hour (or 1,800 person trips) can use the proposed project due to its capacity. Therefore, the excess trip making (2,720-1,800 = 920 trips) would represent people arriving early and potentially purchasing tickets for later in the day. All tickets for admission were sold through ticket agencies for the Monterey Bay Aquarium for peak periods following the initial year of operation, to avoid double trips. A similar approach could be used for the project.

COMMENT

"On Page III-13 of the Traffic Study, a survey of northern waterfront visitors is footnoted (#31). The survey consisted of 390 returned forms over a period from 10

AM to 11:30 PM. This survey was taken in March, a non-peak attendance month. Visitors in March may have significantly different travel patterns than in August, was this considered?" (Peter Martin)

RESPONSE

The survey date cited, March 29, 1986, was during Easter weekend and at the end of a week when many schools and colleges were on spring vacation. Due to the holiday and the fact that many schools were not in session peak spring conditions were felt to be similar to summer conditions. This fact was confirmed by casual interviews of many of the retailers in the area. Additionally, the Northern Waterfront Traffic and Transportation Study (page A-20) compared the results of the visitor survey in 1986 to previous Fisherman's Wharf surveys of travel characteristics. The comparison to survey data from July 1982 indicated very similar findings with regard to mode split and little difference between peak spring and summer conditions. Peak season travel characteristics, i.e. mode of travel, trip origin, trip purpose, and trip linking characteristics, were assumed to be similar for peak spring and summer.

COMMENT

"The survey data from the Northern Waterfront Study, which is used in The Underwater World at Pier 39 Traffic Study to estimate peak hour factors and other information should be summarized and presented in the Traffic Study and the DEIR." (Peter Martin)

RESPONSE

The comment is noted. The pedestrian intercept survey is summarized below (pages A-14 to A-20 of the Northern Waterfront Traffic and Transportation Study, City and County of San Francisco, by DKS Associates, March 1987).

Retail Surveys

Weekday and weekend trip generation rates for retail were obtained by surveys of two retail establishments located within the Wharf. DKS Associates counted pedestrians entering and exiting Pier 39 from 10:30 AM to 9:00 PM and the Bay Company from 9:00

AM to 11:30 PM on Saturday, March 29, 1986, which was the last weekend of spring break for most colleges and Easter weekend. This weekend was selected because trip activity at Fisherman's Wharf, due to the holiday, is comparable to a summer weekend. In addition, pedestrian counts were conducted at the Bay Company on Friday June 20, 1986 from 4:30 to 6:00 PM to identify the relationship of weekday peak period trip generation to weekend peak generation. Pedestrian intercept surveys were conducted at Pier 39, the Bay Company, and between Ghirardelli Square and The Cannery March 29, 1986 to determine mode of travel, trip origin, trip purpose and trip linking characteristics. A total of 390 survey forms were completed between 10:00 AM and 11:30 PM.

The trip generation surveys were conducted at Pier 39 and the Bay Company to identify differences in trip rates for large retail projects compared to small retail establishments. Tables A-6 and A-7 (C&R 1 and 2) summarize the person trip generation rates developed for retail uses. The in/out data for each site is summarized graphically in Figure A-5 (C&R 9). It was found that the larger retail projects have a lower person trip rate per 1,000 square feet in terms of the number of people going in and out of the project at the front door. However, the decision to make a specific shopping trip was found to be greater with larger retail. In terms of external trip making (trips from outside areas to the Northern Waterfront), it was found that larger retail projects attract more trips per 1,000 square feet than smaller retail sites. For this study, the person trip rates used for proposed retail developments of less than 50,000 gross square feet corresponds to the trip rate observed at the Bay Company while the trip rates observed at Pier 39 have been used to estimate trips generated by proposed retail projects in excess of 50,000 gross square feet.

The pedestrian intercept survey results are summarized on a sample interview form shown in Table A-8 (C&R 3). Figure A-6 (C&R 10) summarizes the arrival and departure time data from the survey. It shows the wharf area activity peaks between 1:00 and 5:00 PM with the highest accumulation of people between 3:00 and 4:00 PM on Saturdays. The predominant mode of travel was by automobile with an average 3.29 persons per auto. Most people indicated they came to the Northern Waterfront to sightsee with shopping or restaurant trips (retail) second highest. People made an average of 9.6 stops per trip, reflecting a high level of trip linking. Half of the trips to the Northern Waterfront were made from San Francisco, with a majority of those trips starting from within the study

TABLE C&R 1

TABLE A-6

PERSON TRIP GENERATION
Bay Company - San Francisco
Survey Date: Saturday, March 29, 1986

DAILY	
Trips	14,100
Size	7,312 GSF
Rate (Total)	1,930/KSF*
Rate (External)	20/KSF**

	Noon	PM Peak
15-MINUTE	12:45 - 1:00	3:40 - 3:55
Trips	286	397
Percent of Daily	2.0%	2.8%
In/Out	53/47	56/44
HOUR	12:30 - 13:30	3:35 - 4:35
Trips	1,096	1,482
Percent of Daily	7.8%	10.5%
In/Out	50/50	52/48
TWO-HOUR		3:00 - 5:00
Trips		2,797
Percent of Daily		19.8%
In/Out		50/50

*Rate shown as number of person trips per 1,000 gross square feet (KSF).

**External rate only reflects those trips which are attracted from outside the Wharf area to the Bay Company. This is computed by multiplying the total trip rate by the percentage of shopping trips purposes from the Bay Company survey (9.5%) and dividing by a trip linking factor to account for multiple stop trip making (9.6 stops per trip) -- (1930 x 0.095/9.6).

Source: City and County of San Francisco, Northern Waterfront Traffic and Transportation Study by DKS Associates, March 1987, p. A-15.

TABLE C&R 2

TABLE A-7

PERSON TRIP GENERATION
Pier 39 - San Francisco
Survey Date: Saturday, March 29, 1986

DAILY	
Trips	59,000
Size	189,000 GSF
Rate (Total)	315/KSF*
Rate (External)	45/KSF**

	Noon	PM Peak
15-MINUTE	1:30 - 1:45	4:05 - 4:20
Trips	2,211	1,800
Percent of Daily	3.7%	3.1%
In/Out	47/53	50/50
HOUR	12:45 - 1:45	4:00 - 5:00
Trips	8,096	6,415
Percent of Daily	13.7%	10.9%
In/Out	52/48	43/57
TWO-HOUR		3:20 - 5:20
Trips		12,483
Percent of Daily		21.2%
In/Out		46/54

* Rate shown as number of person trips per 1,000 gross square feet (KSF).

** External rate only reflects those trips which are attracted from outside the Wharf area to Pier 39. This is computed by multiplying the total trip rate by the percentage of surveyed trip purposes which were shop/restaurant (315 x 0.134).

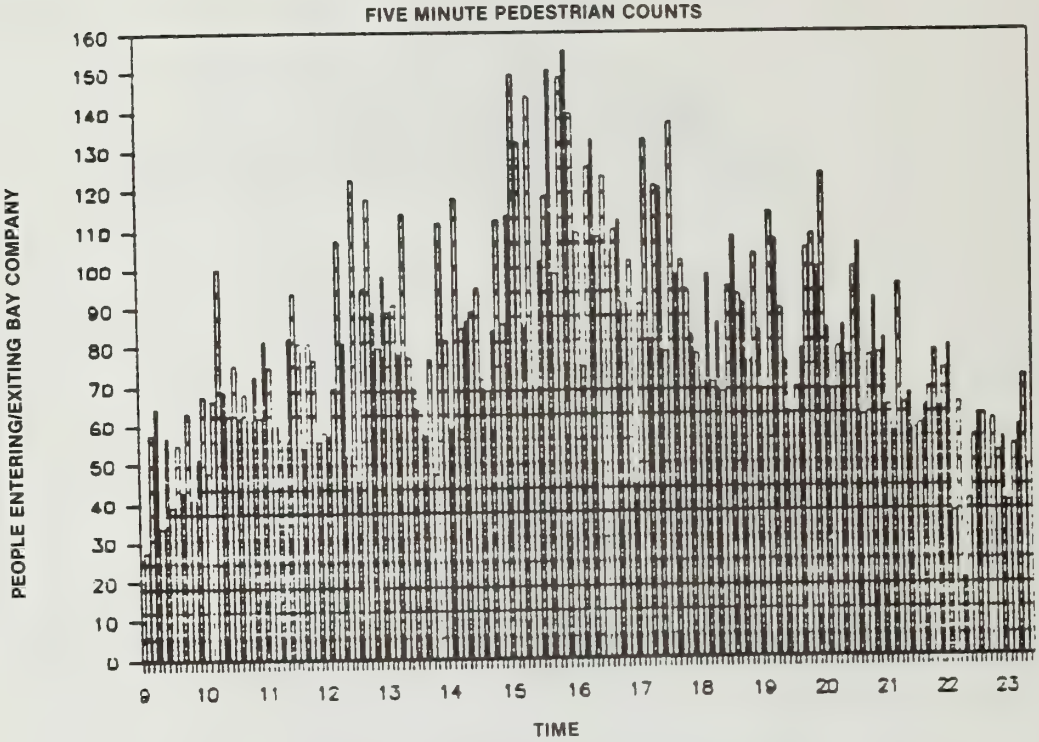
Source: City and County of San Francisco, Northern Waterfront Traffic and Transportation Study by DKS Associates, March 1987, p. A-16.

RETAIL PERSON TRIP SURVEY
NORTHERN WATERFRONT

FIGURE C&R 9

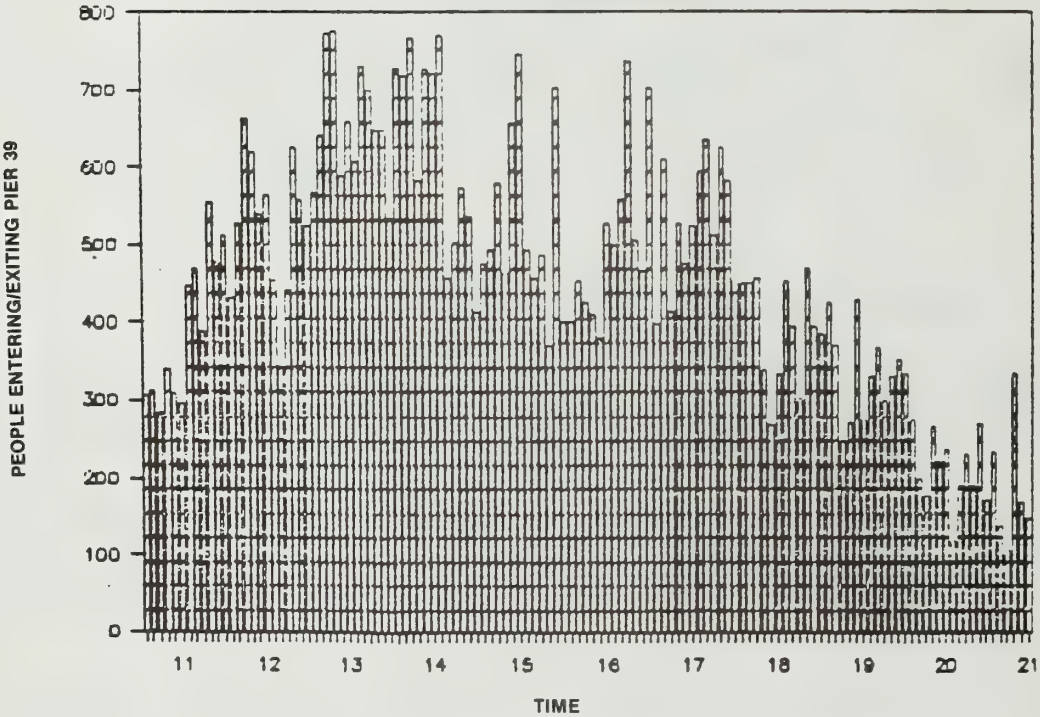
BAY COMPANY COUNT

FIVE MINUTE PEDESTRIAN COUNTS



PIER 39 COUNT

FIVE MINUTE PEDESTRIAN COUNTS



NOTE: TIME REFERS TO HOUR ENDING

SOURCE: DKS ASSOCIATES

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Table A-8
INTERCEPT SURVEY RESULTS

FISHERMAN'S WHARF PEDESTRIAN INTERCEPT SURVEY FORM

Location All Locations Time 1000 AM - 1130 PM 390 Survey Forms

1. How did you travel to Fisherman's Wharf today?

Automobile:	Other:	Transit:
180 Auto Driver	4 Motorcycle	0 BART
18 Auto Passenger	3 Bicycle	32 Bus (Muni)
15 Taxi	43 Walk	65 Cable Car
	0 Other: _____	11 Bus (Tour)
		6 Ferry
		7 Other: _____

If more than one mode of transit, please indicate ie., 1 BART, 2 Bus

2. What is the main purpose of your trip today? Select only one purpose.

38 Shopping
25 Restaurant or Bar
267 Sightseeing or Recreation
16 Personal Business
33 Work or Work Related

3. If sightseeing or recreation is the main purpose of your trip today, which attractions have you or are you planning to visit:

181 Pier 39
30 Anchorage
45 Cannery
61 Ghiradelli
17 Bay Cruise
6 Ferry
8 Historic Ships
34 Other: _____
4 Helicopter
5 Museum
14 Alcatraz

4. How many stores have you or are you planning to visit today?

26 0 28 1 87 2-5 70 6-10 165 more than 10

5. What time did you get to the Wharf today? _____

6. What time do you expect to leave the Wharf? _____

7. Where do you live?

69 San Francisco 76 Greater San Francisco Bay Area 223 Other: _____

8. Where did you start your trip today? (Where are you staying?)

City: _____ Zip Code: _____

IF YOU DROVE A VEHICLE TO FISHERMAN'S WHARF TODAY:

9. How many people (including yourself) arrived in your automobile?

(Fill In): 3.29 people

10. How far from here did you park?

31 Less than 1 block
20 1 block
33 2 blocks
30 3 blocks
68 4 or more blocks

11. Did you park

76 On the street
20 Wharf area (Commercial)
8 In residential neighborhood
55 In a lot
57 In a garage
26 Pier 39
5 Anchorage
10 Ghirardelli
12 Other: _____

12. If parked on-street, why?
(Answer one)

32 More convenient 38 Less Cost

13. How long did you look for parking today? 9.2 Minutes

14. On what streets did you approach the wharf today?

70 Embarcadero 13 Columbus 31 Van Ness 29 Bay 32 Other: _____

15. Any other comments? (Use Back of Survey Form)

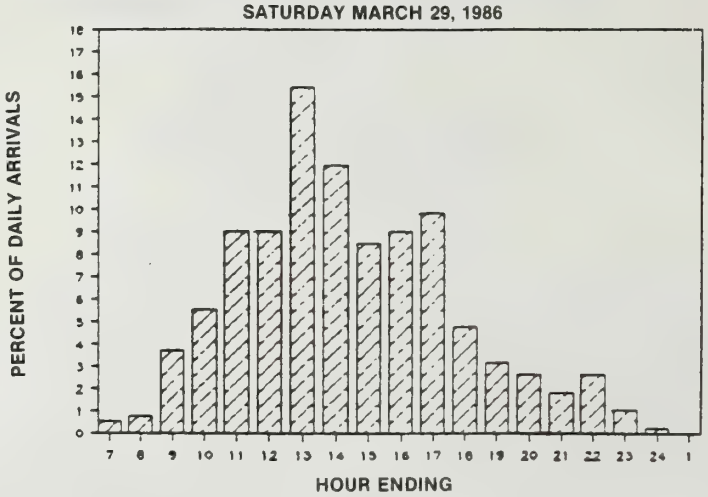
Thank you for helping us by taking the time to answer this survey.

VISITOR SURVEY CHARACTERISTICS
FISHERMANS WHARF

FIGURE C&R 10

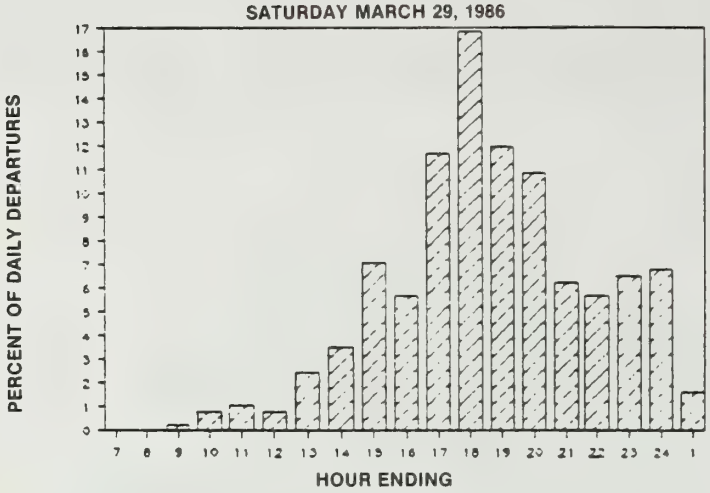
ARRIVAL

SATURDAY MARCH 29, 1986



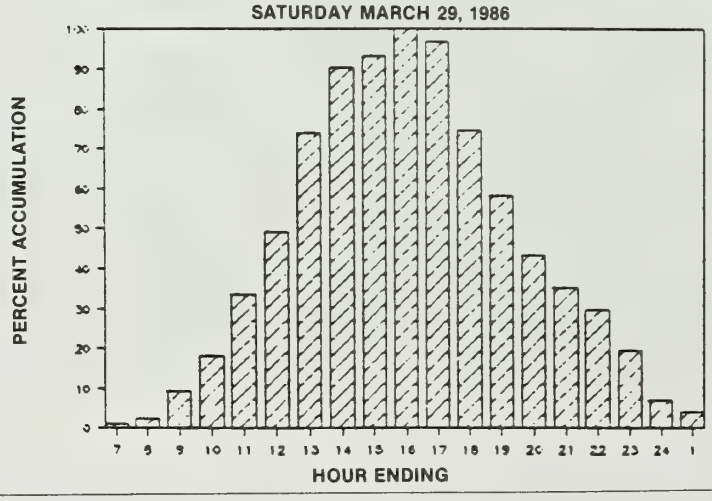
DEPARTURE

SATURDAY MARCH 29, 1986



PEAK WHARF USE

SATURDAY MARCH 29, 1986



SOURCE: DKS ASSOCIATES

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area (indicating hotel guests). Parking characteristics were also surveyed and the raw data is shown in Table A-8 (C&R 3).

While no other detailed retail trip generation surveys have been performed in the Northern Waterfront, there was some empirical work done for the earlier EIR for Pier 39 in 1975.[2] The external daily trip rates for both weekday (30 trips/KSF DKS 1986 survey compared to 34 trip/KSF 1975 Pier 39 EIR) and weekend (45 trip/KSF DKS 1986 survey compared to 45 trips/KSF 1975 Pier 39 EIR) compare favorably for the large retail, even though they are derived from a different set of assumptions and methodology.

The mode split data were compared against a survey conducted for the I-280 Transfer Concept Program Study in July 1982.[3] The results of the two surveys are summarized in Table A-9 (C&R 4). Generally, the results of both surveys are within reasonable ranges of one another. The recent survey data were used in this study.

COMMENT

"The survey data is from 390 forms, is this a statistically valid sample of visitors? This question is addressed both to the survey in general and to the response to survey questions used to derive arrival data.

"Page III-16 of the Traffic Study states that the retail mode split determined in the pedestrian intercept survey done for the Northern Waterfront Study was used. This indicates that a subset of Northern Waterfront survey data was used to estimate a retail mode split. The intercept survey, as discussed earlier, consisted of 390 total surveys; however, according to the survey summary (Table A-8 (C&R 3) - Intercept Survey Results - Northern Waterfront Traffic and Transportation Study - DKS Associates; March, 1987) only 38 visitors have the trip purpose of 'Shopping.'

"Were there significant differences in mode split and average vehicle occupancy between trip types in the Northern Waterfront Study Pedestrian Intercept Survey?" (Peter Martin)

RESPONSE

The results of the pedestrian survey (390 responses) were used for the retail mode split. Since the majority of trips to the waterfront are linked between retail and recreational

TABLE C&R 4

TABLE A-9

COMPARISON OF RETAIL SURVEYS
Mode Split Data

Mode	Northern Waterfront Survey, 3/86	I-280 Survey, 7/82
Auto Driver	16%	19%
Auto Passenger	35	42
Taxi	4	1
MUNI	9	5
Cable Car	18	14
Other Transit	5	8
Walk	11	9
Other	2	2
TOTAL	100%	100%
People per Auto*	3.2	3.2

*(Auto Driver + Auto Passenger %)/(Auto Driver %)

Source: City and County of San Francisco, Northern Waterfront Traffic and Transportation Study by DKS Associates, March 1987, p. A-20.

activities, there was no significant variation between results in travel which could be measured. Traffic impact analysis is generally performed using the best available information. The pedestrian intercept survey was conducted in a manner to sample visitors to the Northern Waterfront area about their travel characteristics. The Northern Waterfront survey data represents the most recent data available regarding visitor travel characteristics in the Wharf area.[4] Interviews were selected at random at three locations over the course of the day in the Northern Waterfront. From a traffic and transportation perspective, this sample provides a valid sampling of travel characteristics for the area. It was verified against previous surveys of Waterfront travel characteristics performed in 1982. The retail mode split was compared with a survey conducted for the I-280 Transfer Concept Program Study.[5] Generally, the results of both surveys were within reasonable ranges of each other, as shown in Table C&R 4 above. The arrival data was compared against vehicle arrival patterns for the Pier 39 garage and from 24 hour traffic counts. The garage and survey provided very comparable results in arrival patterns which were confirmed by evaluating general traffic flow characteristics.

COMMENT

"The Underwater World Aquarium at Pier 39 is a significant new attraction to the Wharf Area. How will this change survey-derived data? (Peter Martin)

RESPONSE

The majority (68%) of pedestrians surveyed for the Northern Waterfront visitor survey indicated sightseeing/recreation as their primary trip purpose. Sightseeing/recreation visitors indicated plans to visit a number of major Wharf attractions, including Pier 39, The Anchorage, Ghirardelli Square, the Cannery, Alcatraz, and the Bay Cruise. Thus, the survey data represents the travel characteristic of people attracted to most of the major Wharf attractions. Since Underwater World will be attracting a significant proportion of its patronage from people who already visit the Northern Waterfront, the travel patterns would not be expected to change significantly.

COMMENT

"Page III-14 of the Traffic Study states that Pier 39 Garage Data was used to develop a weekday peak hour percentage. Is this data representative of expected aquarium

patrons or are Pier 39 garage users different? The question particularly relates to the fact that people who pay for parking (rather than park on the street) may be more inclined to stay shorter times than those who pay less." (Peter Martin)

RESPONSE

The Pier 39 garage data were used since most of the patronage to the proposed project comes from people already visiting the area. Parking records were reviewed for ten summer weekdays in August, 1987 in the process of developing a weekday peak hour percentage. The average length of stay was 2.76 hours, which is longer than the duration of metered parking spaces in the area. This indicates that many people who pay for parking in the Pier 39 garage stay in the area for several hours, which would be typical of aquarium patrons driving to the area. The Pier 39 garage is commonly used by a wide cross section of visitors to the Northern Waterfront and provides a very good reference for general arrival and departure patterns.

COMMENT

"... how will the aquarium patrons who are assumed to visit Fisherman's Wharf currently, (and, therefore, not generate new trips) change their travel patterns after the aquarium is open?

"Will current visitors who patronize The Aquarium stay in the wharf area longer?

"Were changes in current visitor travel patterns considered with respect to the peak hour trip generation?

"Were changes in travel patterns for people currently visiting the wharf considered in the parking analysis?" (Peter Martin)

RESPONSE

As was found in the pedestrian intercept surveys of the Northern Waterfront,[6] most people come to the waterfront, find a place to park, and walk between attractions. This would be true for the proposed project. This increase in pedestrian activity was studied in

the EIR (page 100) and recommendations were made. The major traffic impact as people arrive at the waterfront is created in finding parking. With the proposed project, additional traffic directed toward the 80 Francisco garage was studied. The project could have some effect on travel patterns within the Wharf area, although any changes would probably be so small in comparison to day-to-day variations in travel patterns that it would not be measurable to traffic operation.

It is possible that visitors to the aquarium would stay in the Wharf longer. This possibility is accounted for in the parking and peak hour trip generation analysis by the use of a conservative methodology based on the maximum daily capacity of the facility of 12,600 visitors. It is highly unlikely that the project would be able to attract this level of patronage, which assumes a constant level of attendance throughout the day, but by using it the peak period trip generation and peak daily parking impacts are not underestimated.

COMMENT

" . . .assumption on split between people coming here anyway and new visitors.

"The bottom line from these assumptions are that the 'linked trips' mean that visitors will shift their time (and money) from other places in the area to the Aquarium." (Sue C. Hestor)

"The link trips assumption on traffic, the split of how many people are the net new people and how many people are already there. The City continues to do that on all retail projects. And the bottom line which you have to be explicit about here is that you are either assuming that they're going to be taking away business from somebody else or they're actually going to increase their time, as the last comment.

"It can't be a wash. The city has to bite the bullet and say: If people are going to make five stops at Fisherman's Wharf and this is just going to be one of their five, one of the other businesses is going to lose out, or there is going to be a net increase in traffic, or people are going to increase their stays." (Sue Hestor - Hearing)

"You must account for people going to the aquarium and their trips in a limited range of options: (a) they are totally new trips which otherwise wouldn't come here, (b) they are 'old' visitors who will add this stop to their itinerary, increasing the time they spend at the Wharf and the number of stops they make, or (c) they are 'old' visitors who will spend the same amount of time at the Wharf and will eliminate other stops on their itinerary." (Sue Hestor)

RESPONSE

An estimated 69% of the total initial year project attendance would be linked trips, rising to 71% by 2005. The comment identifies linked trips as belonging to one of two categories: 1) visitors who add the aquarium to their itinerary increasing the number of stops, thus increasing their length of stay; or 2) visitors who stay in the Wharf for the same amount of time by decreasing the number or duration of visits to other attractions. The project's linked trips could include a combination of these two categories. The parking analysis for the project assumes that visitors generally would make longer stays by incorporating conservative assumptions of daily attendance into the demand calculations; longer stays would increase parking demand (as analyzed in the EIR) by reducing parking turnover. Longer stays by those already visiting the Wharf would not result in an increase in traffic.

COMMENT

"The comparison between Marine World/Africa USA and the project (Traffic Study Page III-16) in terms of auto occupancy is flawed. Marine World/Africa USA is a huge family-oriented theme park, in a relatively isolated location. It is only natural that groups would travel there in automobiles. In contrast, the proposed aquarium is located in the center of an extremely attractive urban tourist center. It is not valid to compare auto occupancy of the two projects and state that 3.2 persons/vehicle used in analyzing the Pier 39 Aquarium project is conservative." (Peter Martin)

"The analysis also identifies an average auto occupancy rate of visitors into the area of over three people per automobile. It refers to some studies that were done for other recreational facilities.

"We are wondering in fact whether Marine World U.S.A. and some of these other activities are that similar to the proposed aquarium project -- that, in fact, the average auto occupancy rate for the aquarium would be over three people per automobile. It's probably going to be less than that." (Peter Marin - Hearing)

RESPONSE

Page 89 and Footnote 7 of the EIR explain development of mode split and auto occupancy for the project.

The vehicle occupancy factor of 3.2 people per car used for the analysis of project impacts is taken from surveys of waterfront visitors for the Northern Waterfront Study,[7] and represents typical vehicle occupancy in the Wharf area. The I-280 survey cited above also revealed an occupancy factor of 3.2 people per vehicle for the Northern Waterfront. Attendance records for Marine World/Africa USA indicated 4.26 passengers per private auto. This factor was not used at any point in the analysis, but was used only as a point of reference.

COMMENT

" . . .visitors attracted to cable cars because of their uniqueness are unlikely to take MUNI buses under the current operating plan. Secondly, many people currently able to walk probably do walk, it seems inappropriate to assume that the percentage of people walking will increase by 22 percent. Similar conclusions can be drawn about the other modes. In order to be conservative, it would be more appropriate to assume that those unable to use cable cars would drive, what impact would this assumption have on the traffic and parking analysis?" (Peter Martin)

"The study assumes that 22 percent more people will arrive by car during the initial year to Underwater World (62%) than to Fisherman's Wharf as a whole (51%) due to Cable Car overcrowding. This results in an over-statement of parking and traffic impacts of up to 22 percent and fails to account for increased delays that might occur as a result of more people seeking to use the Cable Cars." (Peter Martin)

RESPONSE

The first comment states that displaced cable car patrons could drive rather than use other transportation modes. The second comment states that displaced cable car patrons could wait for cable cars rather than drive. Most likely is a combination of the two. Some would-be cable car riders would drive rather than wait longer for cable cars, and some riders would endure additional wait times. In addition, some riders would find alternative means of travel, including MUNI and walking. In the EIR analysis, the 18% cable car share of project person trips for the initial year was distributed among all other modes proportionately, based on the percentage for each mode. For the horizon year, the planned MUNI F-line was assumed to accommodate the 18% cable car demand. Table 8 of the EIR shows the resulting numbers of trips using these percentages.

The amount of trips which are being discussed in the comment (pedestrian and MUNI trips) amount to about 30 person trips in the peak hour. This, if converted to auto trips, would amount to nine vehicle trips (five cars in, four cars out), which would have no measurable impact on traffic flow.

It is not reasonable to assume that all those unwilling to wait for cable cars in the initial year would choose to drive private vehicles instead, an assumption which would add approximately 50 new vehicle trips to the peak hour total.[8] Hotel guests, downtown residents, and visitors using BART would seem much more likely to ride cable cars than visitors driving in from out of town. It is unlikely that a large proportion of people would drive to the City, park their cars in the Downtown area, and catch a cable car to the Wharf. People driving to the City to go to the Wharf are likely to drive all the way to the Wharf. Many of the displaced cable car patrons would be unlikely to have cars available (e.g., hotel guests and BART riders). This group would be more familiar with transit availability, and many would be within walking distance of the Wharf.

As described in the background traffic study, cable car wait times could increase 10 to 15 minutes if 18% of project visitors were to wait for cable cars regardless of waiting periods.[9]

Traffic

COMMENT

". . .they summarize the number of vehicle trips into the area, and they only identify the number of private automobile trips into the area and do not include the number of taxis and tour buses and vans. Without the documentation behind this, we cannot tell whether in fact all vehicle trips into the area were assigned to the street network or whether it was only the private vehicles that were assigned to the street network." (Peter Martin - Hearing)

RESPONSE

The commenter is referring to Table 9, page 94, which shows new private vehicle trips. The assignment of project traffic to the street network included trips generated by private automobiles and motorcycles, taxis, limousines, tour buses, and vans. (The number of these trips is shown on Table 8, page 92.)

The following changes to the EIR are provided for clarity:

Change title of Table 9 (DEIR, page 94) to read (changes underlined):

"Project Vehicle-Trip Generation (New Private Auto Trips)."

Change first sentence of first paragraph on DEIR page 95 to read (changes underlined):

"Traffic conditions were studied under a scenario when project traffic (including private autos, motorcycles, taxis, limousines, tour buses, tour vans) was added to existing traffic."

COMMENT

"The Traffic Study states that the project will generate 170 new vehicle trips in the PM peak hour on weekends and 145 new vehicle trips in the PM peak on weekdays during the initial year (see also DEIR Table 9, Page 93 and Page 94). This figure appears to be a very small share of total trips attracted to the aquarium and an even smaller share of aquarium demand. Many of the comments presented above discuss the fact that this estimate may be too low. Additionally, the number of new vehicle

trips itself may not adequately represent the project's impacts because the analysis does not even discuss the impacts cause by changes to existing visitor travel and parking patterns caused by the project." (Peter Martin)

RESPONSE

The estimates of new vehicle trips are based on a detailed, "worst-case" methodology described in detail in Chapter 3 of the background traffic study. The background traffic study goes to great length to explain development of the peak hour vehicle trip numbers (pages III-1 to III-21). As mentioned in responses to previous comments, changes in existing visitor travel would have minor effects on new vehicle trip projections and would be well within the range of accuracy of this analysis.

COMMENT

"In the Intersection Level of Service Analysis, was any consideration given to the large numbers of pedestrians crossing streets in the project area?

"The intersection analyses carried out in the DEIR are based on volume to capacity ratios. An analysis based on vehicle delay would probably yield quite different results. In field observations carried out for those comments, delay at several project area intersections was substantial. For example, at the intersection of Embarcadero and Powell, vehicles westbound on Embarcadero were observed to wait for four or more signal cycles and over four minutes to pass through the intersection. It should be noted that this was not even during the peak hour as defined in the DEIR.

"What was the capacity of intersections assumed to be? Field observations indicate that gridlock conditions and pedestrian movements reduced capacity significantly. At the intersection of Powell and Embarcadero, a total of 200 vehicles passed through the intersection in 15 minutes. There were two lanes feeding the intersection in each direction.

"On weekends, streets throughout the northern waterfront are very congested. Conditions border on gridlock. Were any special analyses performed to take these conditions into consideration?

"Demand for parking in the Pier 39 area is well above supply. During peak weekend time periods, vehicles queue for the Pier 39 Garage on both the Embarcadero and on Beach Street. These queues frequently overflow from queue lanes and block travel lanes. Were these queues considered in the intersection analyses?" (Peter Martin)

"These maps understate the congestion problem. What is the data base -- i.e. exactly what times and days, and any weighting -- for these maps.

"Page 108 - backup on Columbus not reflected on any map.

"Pages 111-112 - same question as first paragraph under 51/52." (Sue Hestor)

"The service levels for the Embarcadero/Jefferson/Powell and Powell/Beach intersections are calculated for the E.I.R. using reduced capacity levels to reflect the effect of queues at the Pier 39 garage in specific lanes. This results in calculation of service level E for current weekend conditions. In reality, these intersections operate at much better levels of service and are constrained only in the lanes used for garage entry points. This is evidenced by data in the Northern Waterfront Traffic and Transportation Study, which show the Embarcadero/Jefferson/Powell intersection operating at service level B for current weekend conditions.

"The service level analysis presented in the E.I.R is based on the application of planning methods outlined in Circular 212. These evaluation methods are applied to both signalized and unsignalized intersections in the study area.

"The service levels for the intersections of Embarcadero/Jefferson/Powell and Powell/Beach are calculated using reduced capacities to reflect peak hour queueing that occurs at these locations in lanes specifically reserved for access to the Pier 39 garage. The queueing that occurs at these intersections is generally not related to limitations on the actual intersection capacity that could be mitigated by additional lanes, but rather to downstream activities or to adjacent garage access constraints. As such, the application of lower capacities suggest worse service levels for these intersections than actually exist based on present intersection configurations.

"The capacities at the intersection of Embarcadero/Jefferson/Powell are manually adjusted to values which are 25% to 50% of standard levels. This results in service level E conditions during the weekend peak hour, although data in the Northern Waterfront Traffic and Transportation Study shows the Embarcadero/Jefferson/Powell intersection operating at service level B for current weekend conditions.

"The unsignalized intersection of Powell/Beach was computed as if signalized, with a capacity of 1000 vehicles per lane per hour. This results in service level E conditions during the weekend peak hour. This method predicts worse conditions than would the standard method from circular 212, which assumes 1425 critical vehicles per hour for a three-phase signal. If this location were analyzed based on its current configuration as an unsignalized (all-way stop) location, the capacity would be 1,900 for the sum of all approach vehicles during the peak hour. Based on the total weekend approach volume of 1146 vehicles, this would result in a volume/capacity ratio of 0.60 and service level B conditions." (Hans Korve)

"In terms of the findings that were described under the existing setting, we believe that the intersection level of service identified in there is probably understated if the pedestrian conflicts at the intersections were not identified and if other conflicts such as traffic blockages were not identified." (Peter Martin - Hearing)

RESPONSE

Pedestrian volumes were accounted for in the form of minimum crossing times for every signalized study area intersection as well as those that were analyzed using the signalized intersections methodology (i.e. Powell/Beach, Embarcadero/North Point). This is standard procedure for level of service analysis at intersections with high pedestrian volumes, such as those in the study area.

Level of service (LOS) analysis was performed using the broadly accepted Circular 212 Planning Method,[10] which is based on a volume-to-capacity ratio. The capacities used at most study area intersections were reduced to account for increased vehicle delay caused by factors such as high pedestrian volumes, lack of identifiable destination points, and confusing intersection geometrics. In the case of Powell/Embarcadero, the queue of

vehicles waiting to enter the Pier 39 garage also reduces intersection capacity. The capacity reductions were based on field observation. For example, at Powell/Embarcadero, the capacity of the northbound approach was reduced to 1,000 vehicles per hour, due to intersection geometrics and the counterflow lane into the garage. Based on repeated field observations, the westbound approach capacity was estimated at 800 vehicles on weekdays and 600 vehicles on weekends. The reduced capacity reflects several factors, including congestion for westbound traffic caused by the slow movement of vehicles into the Pier 39 garage during peak periods, the additional traffic impedance caused on weekends by vehicles waiting to enter the parking area on Seawall Lot 312, and downstream congestion which reduces the ability of vehicles not turning to move through the intersection. The capacities used in the Level of Service calculations for this intersection conform with the field observation cited in the comment, during which 200 vehicles passed through the intersection in 15 minutes. This corresponds to an hourly capacity of 800 vehicles per hour, which is the average of the approach capacities used for weekend Level of Service analysis. Using these reduced capacities, the intersection operated at Level of Service E on weekends, which represents the intersection's capacity. The intersection of Powell/Beach was analyzed as if signalized, with a reduced capacity of 1,000 vehicles per hour. The resulting LOS E operation closely matches observed conditions, where vehicles must wait 30 to 60 seconds to clear the intersection on summer weekends. Assuming standard default capacities, i.e., 1,425 vehicles for signalized operation or 1,900 vehicles for all-way stop operation, results in levels of service which represent operational conditions significantly better than those actually observed.

Table C&R 5 indicates the range of delay associated with each level of service. The delay represents the average delay to all vehicles passing through the intersection.

Traffic counts were taken in the spring of 1986 and summer of 1987. Counts were taken during the 4:00 PM to 6:00 PM peak period on weekdays, and from 3:00 PM to 5:00 PM on weekends.

The intersection of Embarcadero/Jefferson/Powell was analyzed in the Northern Waterfront Transportation Study prior to the signalization of the intersection. In that study the

TABLE C&R 5

LEVEL OF SERVICE DESCRIPTIONS

City of San Francisco

Intersection Level of Service (LOS) Interpretation

Level of Service	Description	Average Delay (Seconds	Volume to Capacity Ratio
A Free Flow	No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Insignificant delays.	0-5.0	.00-.6
B Stable Flow	An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles. Minimal delays.	5.1-15.0	.61-.70
C Stable Operation	Major approach phase may become fully utilized. Most drivers feel somewhat restricted. Acceptable delays.	15.1-25.0	.71-.80
D Approaching Unstable	Drivers may have to wait through more than one red signal indication. Queues develop but dissipate rapidly, without excessive delays.	25.1-40.0	.81-.90
E Unstable Operation	Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersection. Significant delays.	40.1-60.0	.91-1.00
F Forced Flow	Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections. Excessive delays.	> 60.0	N.A.

Sources:

Highway Capacity Manual, Highway Research Board, Special Report No. 87 Washington, D.C., 1965.

"Interim Materials on Highway Capacity," Transportation Research Board, Circular No. 212, Washington, D.C., January 1980.

City and County of San Francisco, Department of City Planning.

weekend level of service was shown as LOS B. The LOS appearing in the EIR, level E on weekends and D on weekdays, incorporates the signalized operation into the analysis. The details of signal implementation included providing some priority for pedestrians which was not assumed in the earlier analysis. By providing exclusive pedestrian signal phases, pedestrian access is enhanced while vehicle capacity is reduced.

Intersection levels of service are the recognized method for evaluating and describing urban traffic conditions. Queues forming at congested intersections vary depending on the time of day, and vary within the peak hour of the day. Pictures of vehicle queues provide only a snapshot of the intersection which may not be representative of peak hour conditions, while the level of service is a broader description of conditions that applies to the entire peak hour. The level of service descriptions on Table B-2 on pages A-39 and A-40 of the EIR are representative of conditions during the entire peak hour. Table C&R 5 provides additional information about delays resulting from traffic congestion.

COMMENT

"Access to the Wharf via the Embarcadero must be closely scrutinized. Each upcoming project must be forced to deal realistically with traffic and parking problems it will create." (Mary Lolli)

RESPONSE

A substantial portion of the traffic analysis focuses on traffic operation along The Embarcadero (background traffic study, pages III-20 to III-28). The Embarcadero Roadway Project, which is in the final planning stages, incorporates measures to improve traffic flow characteristics and traffic safety. That project provides new signalized left turn lanes, the addition of the F-line historic streetcar line and improved pedestrian areas. These changes, combined with the recommended second access point and signing changes for the Pier 39 garage, can improve access to the Wharf via The Embarcadero.

COMMENT

"Intersections are shown to be <u>less</u> than gridlocked (Level F). Again, we need to know what the consultant considers the 'PM peak hour.' Clearly it depends upon the time of day as to which intersections are impacted to Level F. Earlier in the day, 11:00, 11:30, 12:00, 12:30, certain intersections inbounding Fisherman's Wharf are gridlock-

ed. Similarly, late afternoon - 3:00, 4:00, 5:00 o'clock [sic], the outbound street intersections are Level F. What does the consultant consider 'PM peak'?" (Peter Brown)

RESPONSE

Mid-day congestion at the intersections surrounding the Pier 39 garage is generally due to the garage filling up, with the result that traffic is not able to flow freely, rather than increased volumes through these intersections.

The PM peak hour is the hour of the day with the highest volumes of traffic through study area intersections. On weekdays, the PM peak hour is generally 5:00 PM to 6:00 PM, and on weekends 3:00 PM to 4:00 PM. Additional weekend traffic counts were taken between 10:30 AM and 3:00 PM on October 22, 1988, toward the end of the tourist season, at the four intersections surrounding the Pier 39 garage: Embarcadero/Beach, Embarcadero/Powell, Powell/Beach, and Stockton/Beach. Occupancy records for October 22, 1988 show that the Pier 39 garage filled to capacity, similar to conditions on peak summer weekends. The new counts were used to determine if these intersections experience peak traffic flows at different times from the study area as a whole. The counts indicate that the peak hourly volumes during the weekend 10:30 AM - 3:00 PM mid-day period are similar to or less than the peak hour volumes during the overall study area weekend peak period of 3:00 to 5:00 PM. Table C&R 6 below compares the peak hourly volumes used in the EIR traffic analysis with the highest hourly volumes in the 10:30 AM - 3:00 PM mid-day period. Detailed traffic counts are included in the Appendix.

COMMENT

"In describing existing traffic conditions within the area (pp. 49-50), the DEIR documents that key intersections (Powell/Beach, Powell/Jefferson/Embarcadero, and Embarcadero/Beach) already operate at unacceptable levels of service during peak hours. Intense pedestrian activity in the vicinity of Pier 39 combined with automobile queuing to enter the Pier 39 garage exacerbates the congestion that currently exists. The mitigation measures discussed in the DEIR fail to adequately accommodate projected increases." (M.K. Veloz)

TABLE C&R 6

WEEKEND HOURLY VOLUME COMPARISONS
PM PEAK HOUR AND MID-DAY PEAK HOUR

Intersection	DEIR Peak Hour Volume	Mid-Day Peak Hour Volume
Embarcadero/Beach	1,771	1,723
Stockton/Beach	989	787
Powell/Beach	1,146	1,058
Embarcadero/Jefferson/Powell	1,263	1,200

Source: DKS Associates

"On page 3 it said that no significant level of service changes would occur due to the project traffic. That is crazy." (Joseph Alioto - Hearing)

RESPONSE

The projected new vehicle traffic from the project (by itself) would not cause significant level of service changes at any of the study area intersections, as documented in the EIR and the background traffic study. By 2005, cumulative development including the project would cause significant level of service changes at a number of study area intersections. Improvements are proposed in the EIR and the background traffic study to mitigate intersection levels of service to acceptable levels (level D or better). These improvements are areawide improvements not necessary to accommodate the additional traffic from the project. The selection, timing, and implementation of improvements to mitigate cumulative impacts would need to be coordinated by the City.

COMMENT

". . .the aquarium project, in conjunction with other development in the area, will significantly impact key intersections (Powell/Beach and Embarcadero/Powell/Jefferson) by producing unacceptable levels of service in peak hours. The Embarcadero/Powell/Jefferson intersection serves as the entrance to Pier 45. Any project that reduced the capability of that intersection to function effectively might

immediately negatively impact present businesses in that area and might preclude the possibility of implementing future plans for Pier 45. The DEIR needs to consider the parking and traffic impacts of the aquarium project on future development currently under consideration in Fisherman's Wharf. Will the additional traffic congestion and parking demand created by the aquarium reduce or even eliminate other development options that might better serve the Fisherman's Wharf community?" (M.K. Veloz)

"Will additional traffic congestion in the vicinity of Pier 39 obstruct access for commercial fishing vehicles and trucks to Pier 45?" (Christopher Martin - Hearing)

RESPONSE

The project alone would not significantly affect operations at the Powell/Jefferson/Embarcadero intersection, nor would it impair access to Pier 45. The primary hours of operation for fish handling activities on Pier 45 are early in the morning (prior to 11 AM). This is before the aquarium would begin to add substantial traffic and when traffic volumes on surrounding streets are low. Cumulative traffic growth, which would include the project as well as proposed development on Pier 45, would exacerbate existing problems at this intersection. Areawide mitigation measures are addressed in the EIR and in the background traffic study which would improve capacity and traffic flow at this intersection, thus improving access to Pier 45 and any future development on the pier. Most important of these is improved access to Pier 39 garage and elimination of the use of the Embarcadero for garage queuing. An additional areawide mitigation measure which would improve traffic conditions at the Embarcadero/Powell intersection is the continuation of Mason Street to The Embarcadero. This improvement is addressed in the background traffic study.

COMMENT

"It would be good to know, re: footnote '3,' whether the traffic counts at Embarcadero/Jefferson/Powell (in 1986 and 1987 the footnote says) were <u>with</u> or <u>without</u> the new traffic signal that was installed there. Clarify.

"We have concerns regarding the accurate environmental setting when only two of the six counts were taken in the summer months. Does this give an accurate setting?" (Irene Nishimura)

". . .the EIR's failure to correctly analyze existing traffic and parking conditions by basing projections on data collected in March, one of the lightest months for wharf traffic." (Christopher Martin - Hearing)

RESPONSE

Traffic counts used for analysis of the eight study area intersections were taken in March of 1986 and 1987, during weeks in which many schools and colleges were on spring break. Additional counts were taken in July and August, 1987, during the peak of the tourist season. The intersections analyzed in the Underwater World EIR and dates they were counted are listed below.

Count Date	Intersection
Tuesday August 4, 1987	Embarcadero/Bay
	Embarcadero/Kearny/North Point
Saturday, August 1, 1987	Embarcadero/Bay
	Embarcadero/Kearny/North Point
Thursday, July 21, 1987	Kearny/Bay
Saturday, July 18, 1987	Kearny/Bay
Thursday, July 9, 1987	Kearny/Francisco
Saturday, July 18, 1987	Kearny/Francisco
Wednesday, March 18, 1987	Stockton/Beach
	Embarcadero/Beach
	Powell/Beach
Saturday, March 21, 1987	Stockton/Beach
	Embarcadero/Beach
	Powell/Beach
Thursday, July 10, 1986	Embarcadero/Jefferson/Powell
Saturday, March 29, 1986	Embarcadero/Jefferson/Powell

DKS Associates conducted traffic counts during July, 1987 at several key intersections in the Northern Waterfront as part of the Super 8 and Clarion Hotels Final Environmental Impact Report which revealed that weekday traffic at the intersections along the perimeter of the Wharf area on Bay and North Point Streets is slightly higher during the summer months as compared to peak spring conditions.[11] No consistent differences between summer and peak spring conditions were observed at the interior intersections during the week, or at any intersections on weekends. This was due to selecting a peak

spring weekend which replicated summer conditions. Summer counts from July and August, 1987 were used for the analysis of project impacts at the intersections on Bay and North Point Streets, while peak spring counts were used at the remaining intersections.

Traffic counts at the Embarcadero/Jefferson/Powell intersection were taken before the new traffic signal was in operation. Extended weekend peak period counts from 10:30 AM to 3:00 PM were taken in October, 1988, when the signal was operating, which showed turning movement patterns similar to the 1986 counts. (The extended peak period counts are attached in the Appendix of this document.)

COMMENT

"This map seems to presume that all Pier 39 traffic is confined to the area that you have put these marks, these little designations, but it seems to me that you should go further as to where this traffic will go and where there may be other congestion." (Sue Bierman -Hearing)

RESPONSE

The background traffic study limits the intersections analyzed for project impacts to the eight intersections which would be most directly affected by project traffic. Beyond this area, project traffic would be much more dispersed such that it would not be measurable within the daily variations in flow. The cumulative traffic impacts section of the EIR (pages 104-113) covers a larger study area, adding 11 major intersections to the analysis, for a total of 19. The impacts of project traffic on regional traffic corridors (the Bay Bridge, the Golden Gate Bridge, I-280 and U.S. 101) are also addressed in the EIR. The project would not have a significant impact on these regional traffic corridors either in the initial year or by the horizon year, 2005.

COMMENT

"Does the cumulative traffic analysis consider the impact of building a second deck on the Golden Gate Bridge?" (Peter Martin)

RESPONSE

The cumulative traffic analysis clearly does not consider the impact of an additional deck on the Golden Gate Bridge. Section 15130 of "The California Environmental Quality Act: Statutes and Guidelines" states that for cumulative analysis: ". . .discussion should be guided by the standards of practicality and reasonableness." Any evaluation of a second deck on the Golden Gate Bridge would fail these tests at this time. Discussion of the traffic impacts of a second deck on the Golden Gate Bridge would be purely speculative in the context of the project and the cumulative analysis in this EIR. Project impacts on the Regional Transportation System are discussed on EIR page 95.

COMMENT

"Does the cumulative traffic analysis consider cumulative development as discussed in the Mission Bay DEIR?

"Background traffic increases (referred to on DEIR Page 106), according to Footnote 16 (DEIR Page 118), consists of trips caused by increased tourist activity. Cumulative development consists of other development in the Northern Waterfront Area. Was other development within the City and region considered." (Peter Martin)

RESPONSE

Background traffic increases representing increased tourist activity as well as through traffic increases representing other development within the City and region were included in the analysis, as stated in the EIR p.106. This growth through the 15-year period would incorporate growth from Mission Bay.

COMMENT

"The draft EIR does not adequately address the impact of weekend and summer-time vehicular traffic congestion." (Robert Pickard)

RESPONSE

The EIR and the companion background traffic study address summer traffic conditions at length. Comparative traffic counts were taken during peak summer and peak spring

conditions, and the highest traffic flows from these comparative counts were used for the analysis. Intersection level of service analysis incorporates the effects of summer congestion through adjustments to intersection capacity to reflect observed summer conditions. The entire analysis of project traffic impacts is based on accommodating peak summer project traffic.

COMMENT

"Page 49. Footnote '1' should be placed at the end of the first sentence. Are Jefferson and Beach Streets recreational as well as transit preferential streets? Please explain." (Irene Nishimura)

RESPONSE

Jefferson and Beach Streets are designated as Transit Preferential Streets as well as Recreational Streets in the Master Plan.[12] In addition, Beach Street is designated as a Class III Bike Route. Footnote 1 gives the source of information in both the first and second sentences on page 49. Therefore, it is correctly placed after the second sentence.

COMMENT

"You need a totally new set of maps -- probably 8 to 10 maps -- that show such things as (1) where are current parking facilities and how much parking at each (and noting any restrictions), (2) One which graphically shows both direction of traffic, numbers of lanes, required turn lanes (like the one that becomes an entrance to the current Pier 39 garage), (3) One which visually shows the queueing [sic] and backups both during rush hour and summer weekends, (4) One that shows how people will get from Pier 39 to 80 Francisco, (5) One which shows pedestrian crosswalks and notes those which pose problems to vehicular circulation, (6) One which shows MUNI routes with some sort of indication of frequency of operation, (7) One which clearly superimposes the F line configuration(s) . . .

"Page 95, para one - This is one of the places where a map should show graphically the LOS. Show backed up cars, not just a 'dot' in the middle of the intersection.

"Page 99 - Another map - show how the queueing works at the garage." (Sue Hestor)

"You need some maps that are real about those streets down there, that show the one-way street patterns. You need to have a map that is big enough to have 80 Francisco on it . . ." (Sue Hestor - Hearing)

"Vehicle access routes and pedestrian access routes to 80 Francisco Garage should be illustrated in a figure." (Peter Martin)

RESPONSE

Additional graphics were prepared to address the commentors' concern. Figures C&R 11 through C&R 14 show lanes, queuing and MUNI routes. Further graphic background, both schematic and photographic are included in two documents which were referenced in the EIR. The "Northern Waterfront Findings Report,"[13] March 1987 and the "Northern Waterfront Traffic and Transportation Study,"[14] March 1987 provide extensive graphic representation of traffic, parking and transit. Crosswalk locations with the heaviest pedestrian flow are shown in Figures 17 and 18 of the Northern Waterfront study. F-line alignment and parking areas are included in this response document.

COMMENT

"Page 52. I think that instead of using these little black squares, triangles to show what the service is, A to F, you should put that. I think seeing the F there gives a better indication." (Sue Bierman - Hearing)

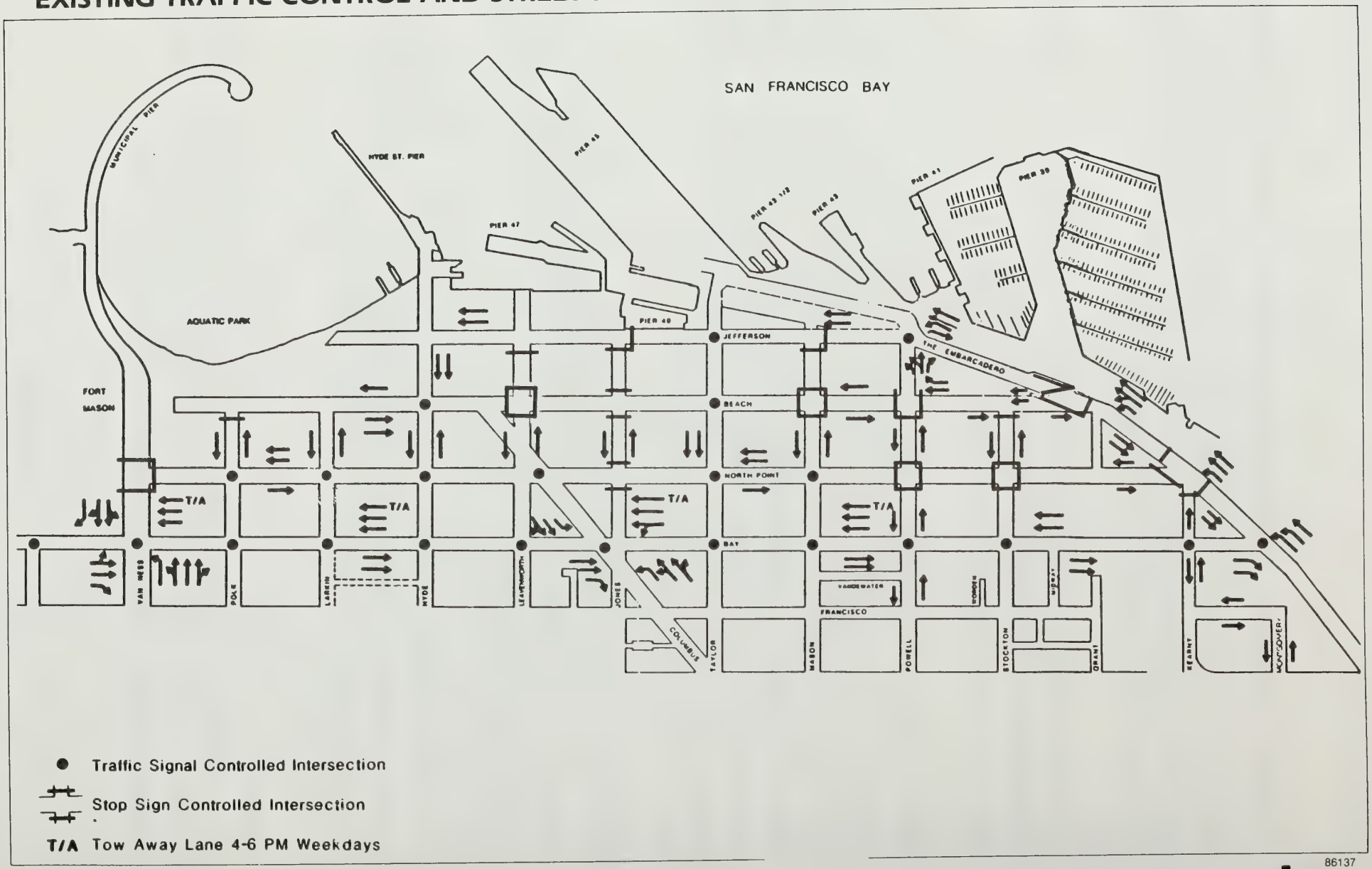
"Also the symbol at Beach/Powell and Embarcadero/Powell is a 'square' turned 90-degrees, instead of being a 'diamond' (see legend) that should have been used. It is confusing as shown, i.e., are these intersections LOS A, B, or E? (Supposed to be E.)" (Irene Nishimura)

RESPONSE

Figures 19, 20, 29, and 30 of the EIR are revised to show level of service by letter rather than symbol and are included below. The level of service symbols for Beach/Powell and Embarcadero/Powell in Figure 20 on page 52 of the EIR represent LOS E.

EXISTING TRAFFIC CONTROL AND STREET NETWORK

FIGURE C&R 11



SOURCE: DKS ASSOCIATES

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TRAFFIC QUEUES ON THE EMBARCADERO

FIGURE C&R 12

Traffic queues on The Embarcadero.

The Embarcadero/Powell/Jefferson intersection.

SOURCE: DKS ASSOCIATES

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TRAFFIC QUEUES ON BEACH AND JEFFERSON STREETS

FIGURE C&R 13

Traffic queues on Beach at Pier 39 Parking Garage.

Traffic queues on Jefferson Street at Powell Street.

SOURCE: DKS ASSOCIATES

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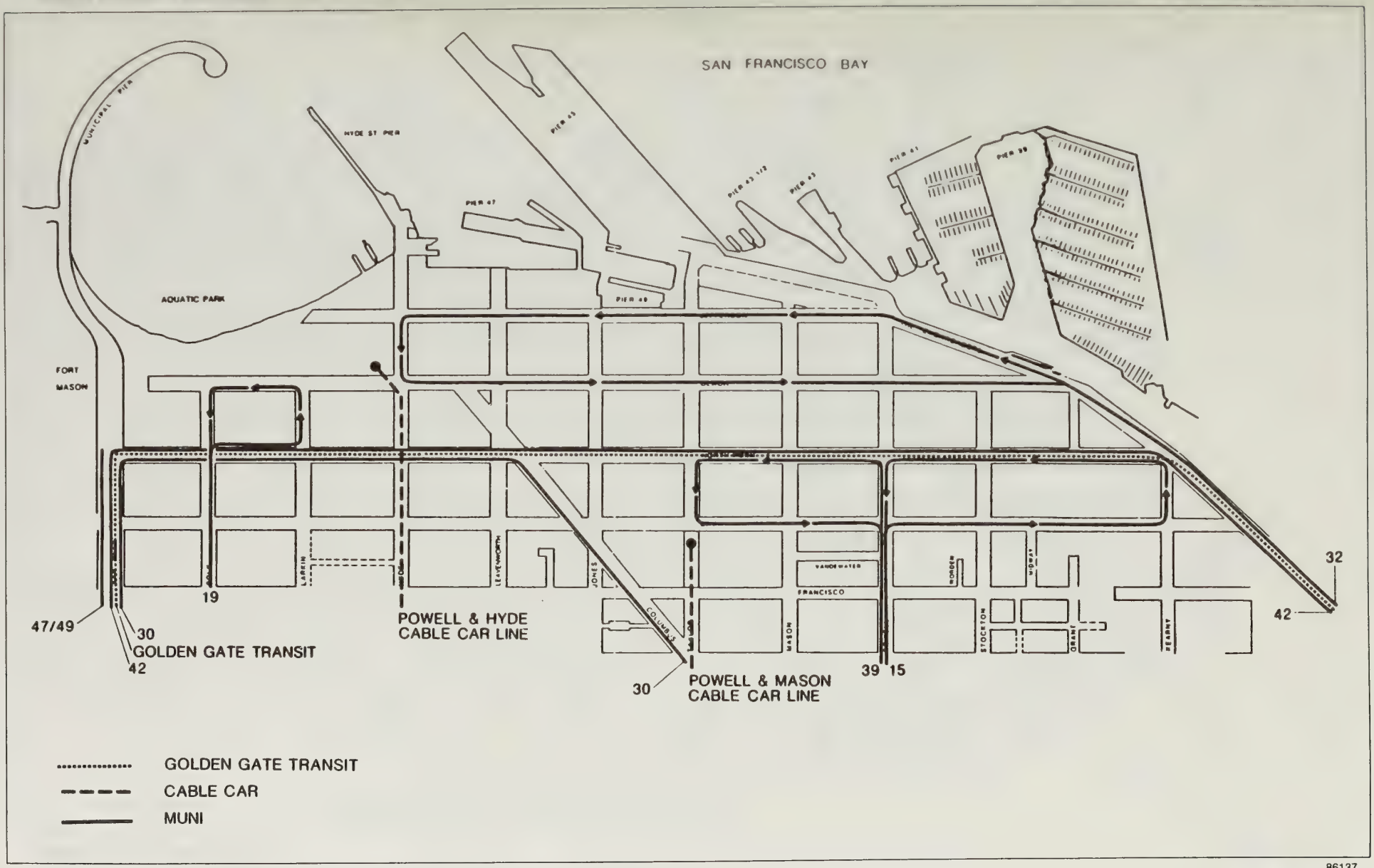
EXISTING TRANSIT SERVICE

FIGURE C&R 14



SOURCE: DKS ASSOCIATES

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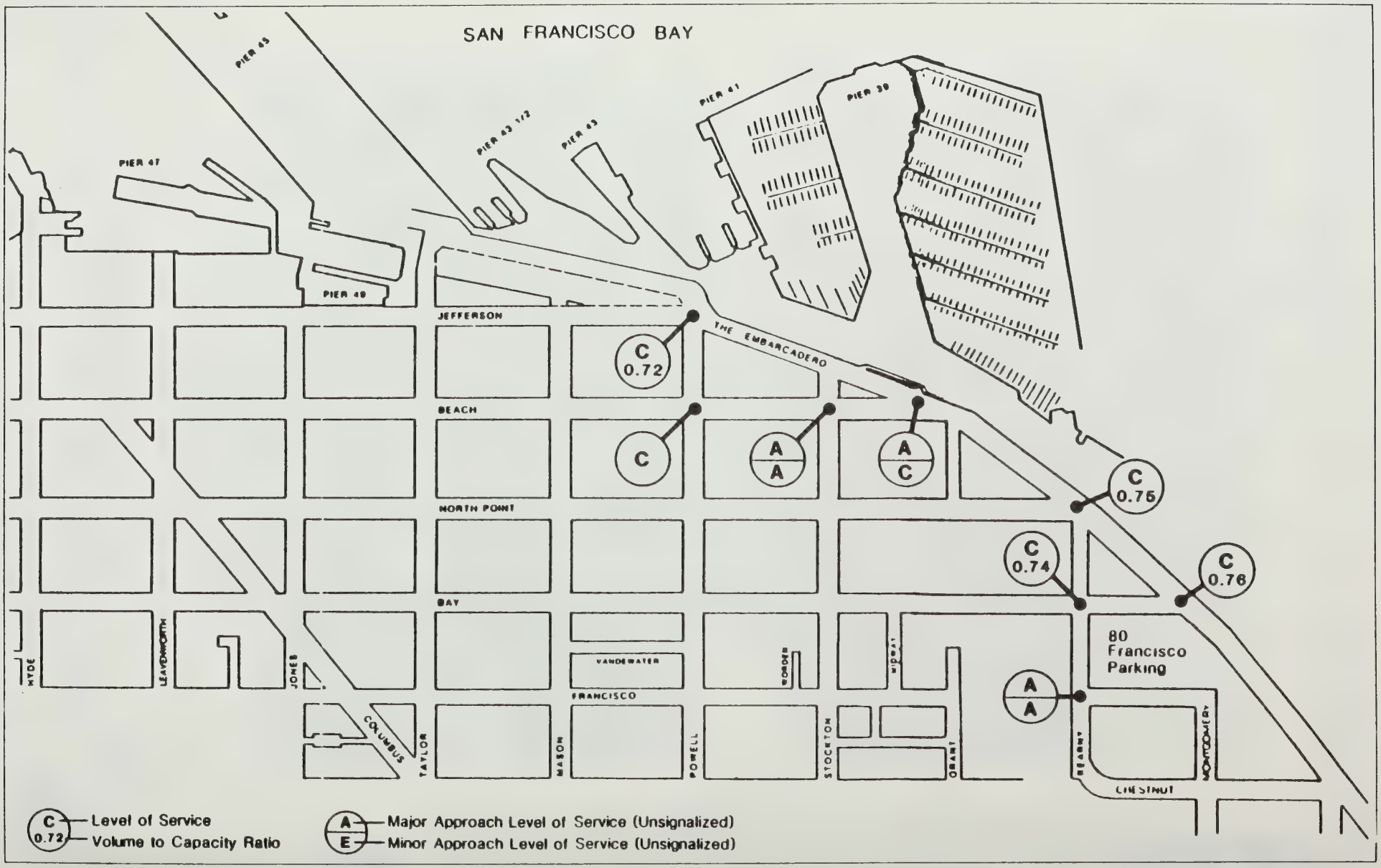
EXISTING WEEKDAY INTERSECTION PERFORMANCE
PM PEAK HOUR

FIGURE 19



SOURCE: DKS ASSOCIATES

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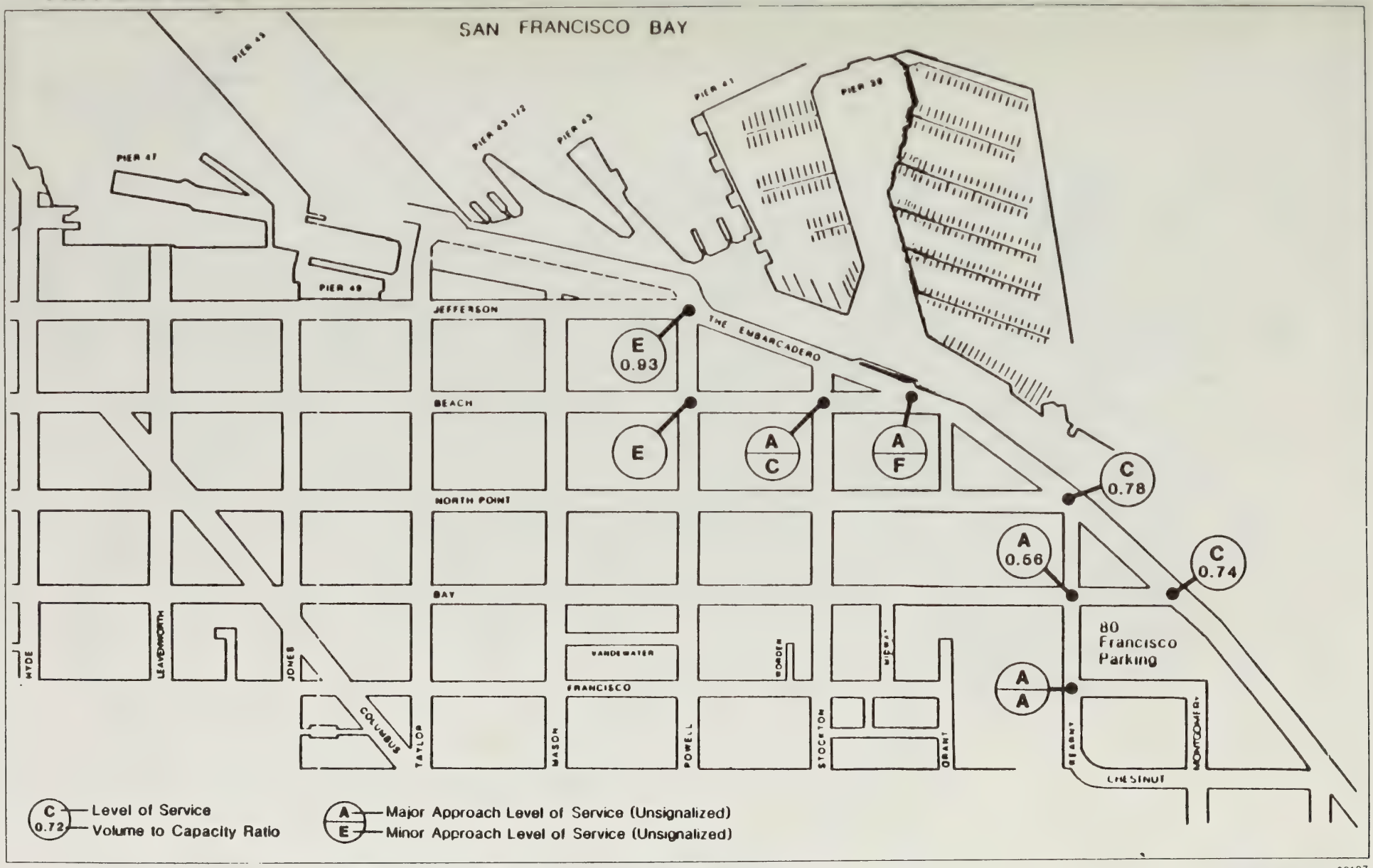
EXISTING WEEKEND INTERSECTION PERFORMANCE
PM PEAK HOUR

FIGURE 20



SOURCE: DKS ASSOCIATES

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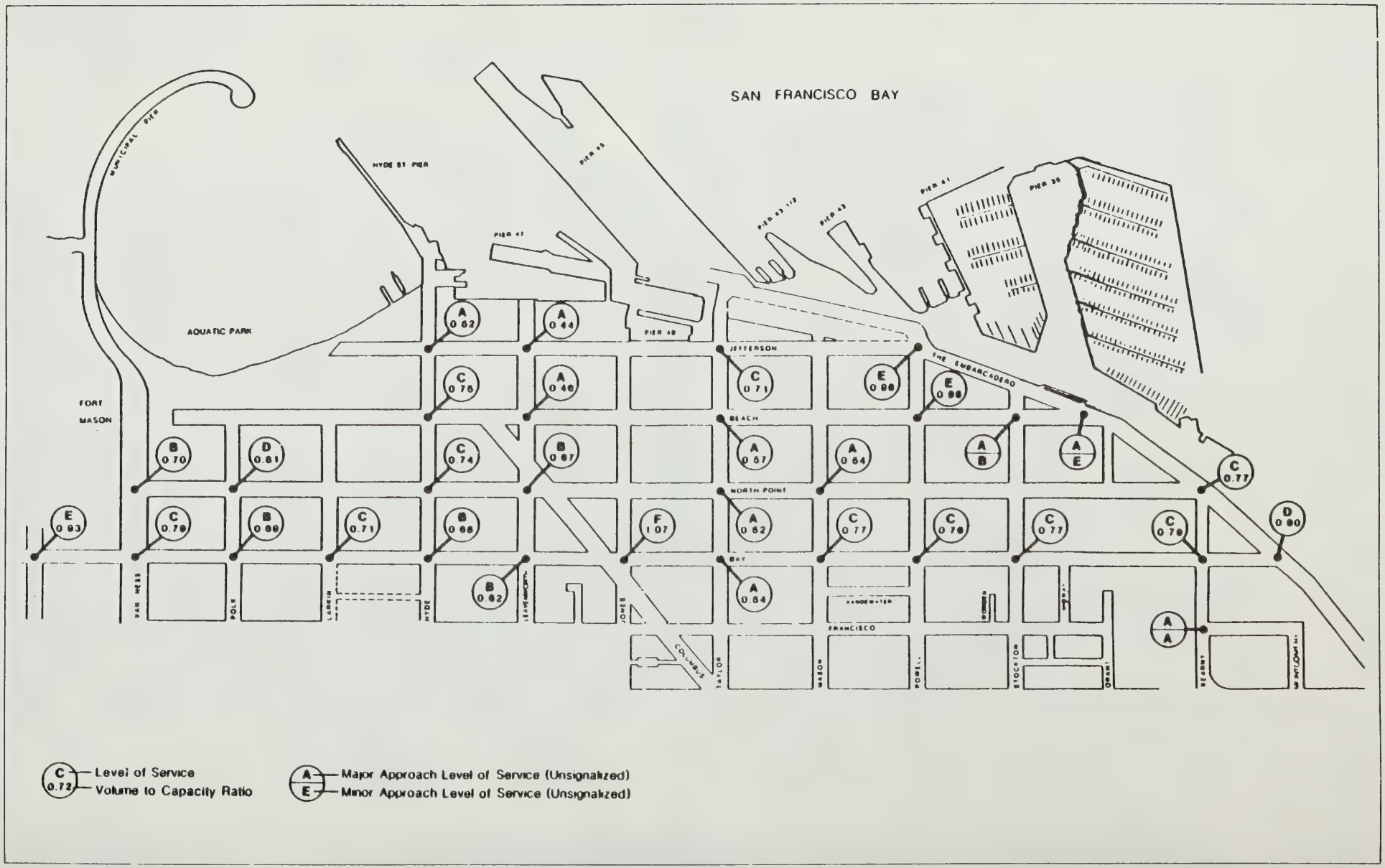
WEEKDAY HORIZON YEAR INTERSECTION PERFORMANCE

FIGURE 29



SOURCE: DKS ASSOCIATES

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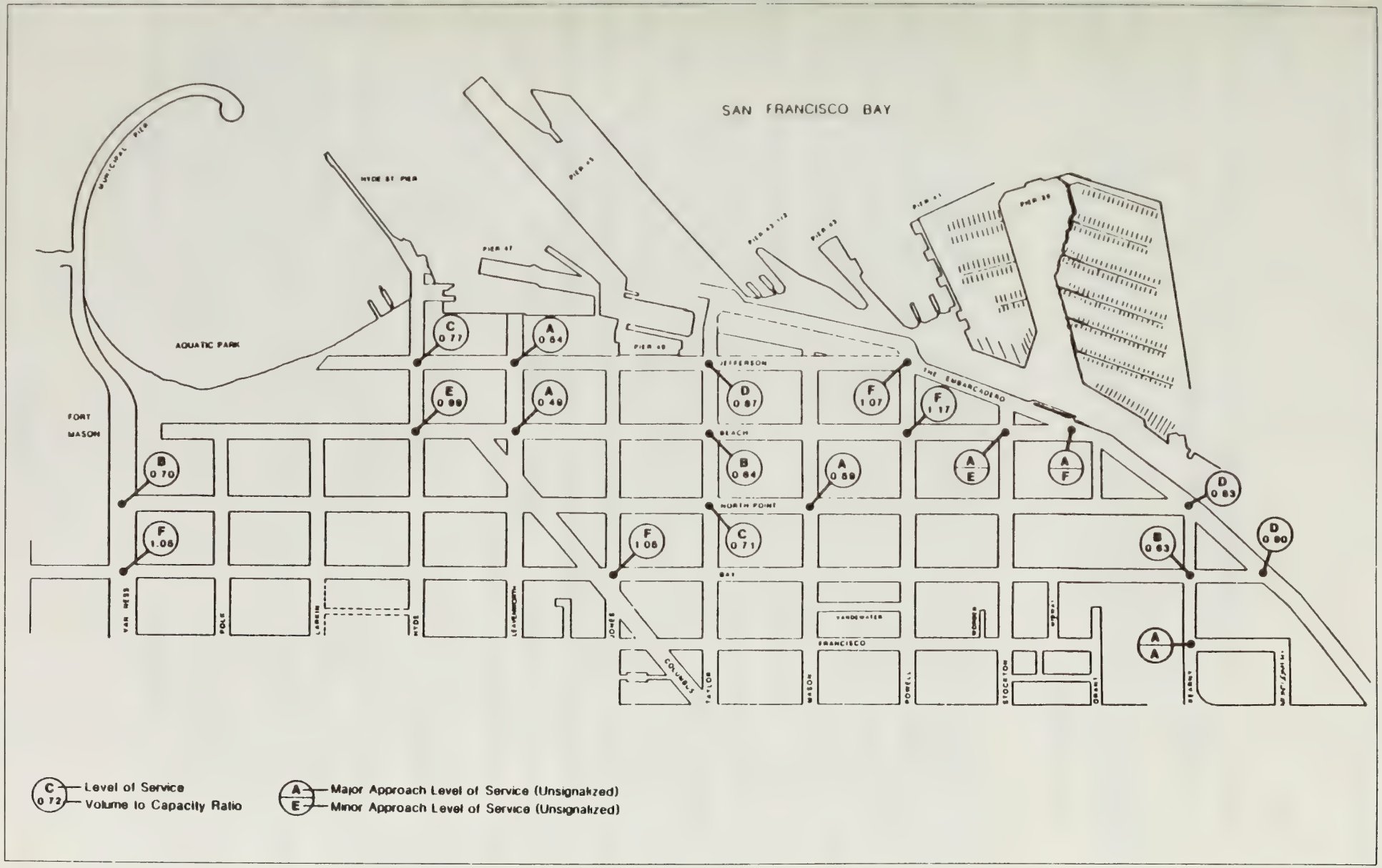
WEEKEND HORIZON YEAR INTERSECTION PERFORMANCE

FIGURE 30



SOURCE: DKS ASSOCIATES

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COMMENT

"Page 49. The last paragraph indicates Level F at Embarcadero and Beach, and that is not on this map. I don't think it is." (Sue Bierman - Hearing)

"The symbol used at Embarcadero/Beach represents LOS A, B according to legend, but the text says that this intersection operates at LOS D, and LOS F for left turns." (Irene Nishimura)

RESPONSE

Figures 19 and 20 (Existing Weekday and Weekend Levels of Service) show level A/B at Embarcadero/Beach, which is correct. Embarcadero/Beach is an unsignalized intersection and the capacity analysis for unsignalized intersections is completely different than for signalized intersections.[15] For unsignalized intersections, capacity calculations are done for each individual movement (through, left and right) for each intersection approach (major -- the predominant street -- and minor). The major approach, which is the left turn from The Embarcadero onto westbound Beach Street, operates at level of service A on weekday and weekend peak hours. The minor approach left turn, from eastbound Beach onto northbound Embarcadero, operates at level C on weekdays and level F on weekends. However, the minor approach includes only 11% of weekend peak hour traffic, and six percent of weekday peak hour traffic. The remaining traffic through the intersection faces little or no delay. The level of service A shown in the Figures represents average of overall conditions for the entire intersection. This rating was done to provide comparison to other overall intersection calculations.

The last paragraph on Page 49 of the EIR is rewritten to read as follows:

> "On weekends, two intersections operate at LOS "D" or worse during the PM peak hour (3:00 - 4:00 PM): Powell/Embarcadero/Jefferson (LOS "E"), and Embarcadero/Beach (also LOS "E"). At Embarcadero/Beach, the left turn from eastbound Beach Street onto northbound Embarcadero operates at LOS "C" on weekdays and LOS "F" on weekends. This single movement represents about six percent of the total weekday peak hour volume, and about 11 percent of the intersection's weekend peak hour volume. The remaining traffic through the intersection experiences LOS "A" conditions on both weekends and weekdays, with little or no delay."

Pedestrians

COMMENT

"The draft EIR fails to address or consider the impact of the increased use of the east-side access roadway for pedestrian access to the proposed attraction (aquarium). This increased access may well pose a fire/life safety issue for the shopping center and the Marina." (Robert Pickard)

RESPONSE

The main entrance to the aquarium would face the entrance to Pier 39. While there would be a pedestrian walkway along the relocated east side access road, there would be no entrance to the project. Pedestrian volumes along the east side would not be expected to increase noticeably, certainly not to the point that safety would become an issue either for pedestrians or marina users.

COMMENT

"Pedestrian analysis should be provided for additional locations than those shown on DEIR Page 102. An analysis should be performed of impacts in the area to the west of Pier 39 which are currently congested and have impeded sidewalks. How will aquarium traffic affect these problem areas, especially since such a high proportion of trips (50 percent) are expected to come from this direction?" (Peter Martin)

RESPONSE

Weekend pedestrian counts conducted as part of the Northern Waterfront Transportation Study identified constrained to crowded existing pedestrian conditions on sidewalks and crosswalks west of Powell Street.[16] The highest pedestrian volumes in this area are along Jefferson Street between Mason and Taylor Streets, where pedestrian flow reaches crowded conditions, with freedom of movement and walking speed greatly reduced. The pedestrian volumes along the south side of Jefferson Street in this area are among the most dense in the City.

The project would add to the pedestrian volumes along this segment. The number of new pedestrian trips generated by the project along this segment of Jefferson Street would be

approximately 200 to 300 additional pedestrians during the PM peak hour, which represents an increase of five to eight percent over the existing peak 15-minute flow rate. This increase would not change the existing pedestrian level of service from crowded to congested. Cumulative development, which would include the aquarium, would lead to congested conditions on this sidewalk segment unless improvements are undertaken to widen the effective sidewalk area. Congested flow conditions represent extremely dense pedestrian flow, with movement highly restricted.

The Northern Waterfront Study lists several potential improvements along this corridor which would retain acceptable pedestrian flow conditions, including removing obstructions, centralizing the location of street vendors and artists, widening sidewalks, and restricting auto traffic on Jefferson Street.

COMMENT

"Are there any accident statistics available on pedestrian accidents in the project area? These should be provided." (Peter Martin)

RESPONSE

Accident records collected for the Department of Public Works indicated that a total of ten accidents involving pedestrians have occurred in the Jefferson Street corridor between Powell Street and Jones Street from 1983 through 1987. Of these, three occurred in 1983, five in 1986, and two in 1987.

COMMENT

"Are any special pedestrian improvements planned between Pier 39 and the 80 Francisco Garage? This area currently has relatively poor pedestrian facilities." (Peter Martin)

RESPONSE

Currently there are no specific planned improvements for pedestrians for the route from 80 Francisco to Pier 39. There are sidewalks which are lightly used today and are wide

enough to accommodate the expected pedestrian flow on Kearny Street and The Embarcadero. With the implementation of the MUNI F-line as part of the planned Embarcadero improvements, signalized pedestrian crossings would be provided at several points along The Embarcadero, including Bay Street, North Point Street, and Beach Street. Pedestrians walking to and from parking at 80 Francisco Street would have several opportunities to cross The Embarcadero. Pedestrian crosswalks are provided at the signalized intersection of Kearny/Bay.

COMMENT

"Page 116 - pedestrian circulation problems noted are one of the main things under review in Redevelopment study." (Sue Hestor)

RESPONSE

Pedestrian circulation issues are being considered in the Fisherman's Wharf Improvement Program (see Figure C&R-15). Recommendations for improvements will be made to address areawide problems rather than specific project-related problems. Many of the improvements to be considered were outlined in the Northern Waterfront Traffic and Transportation Study (pages 80 to 84).

COMMENT

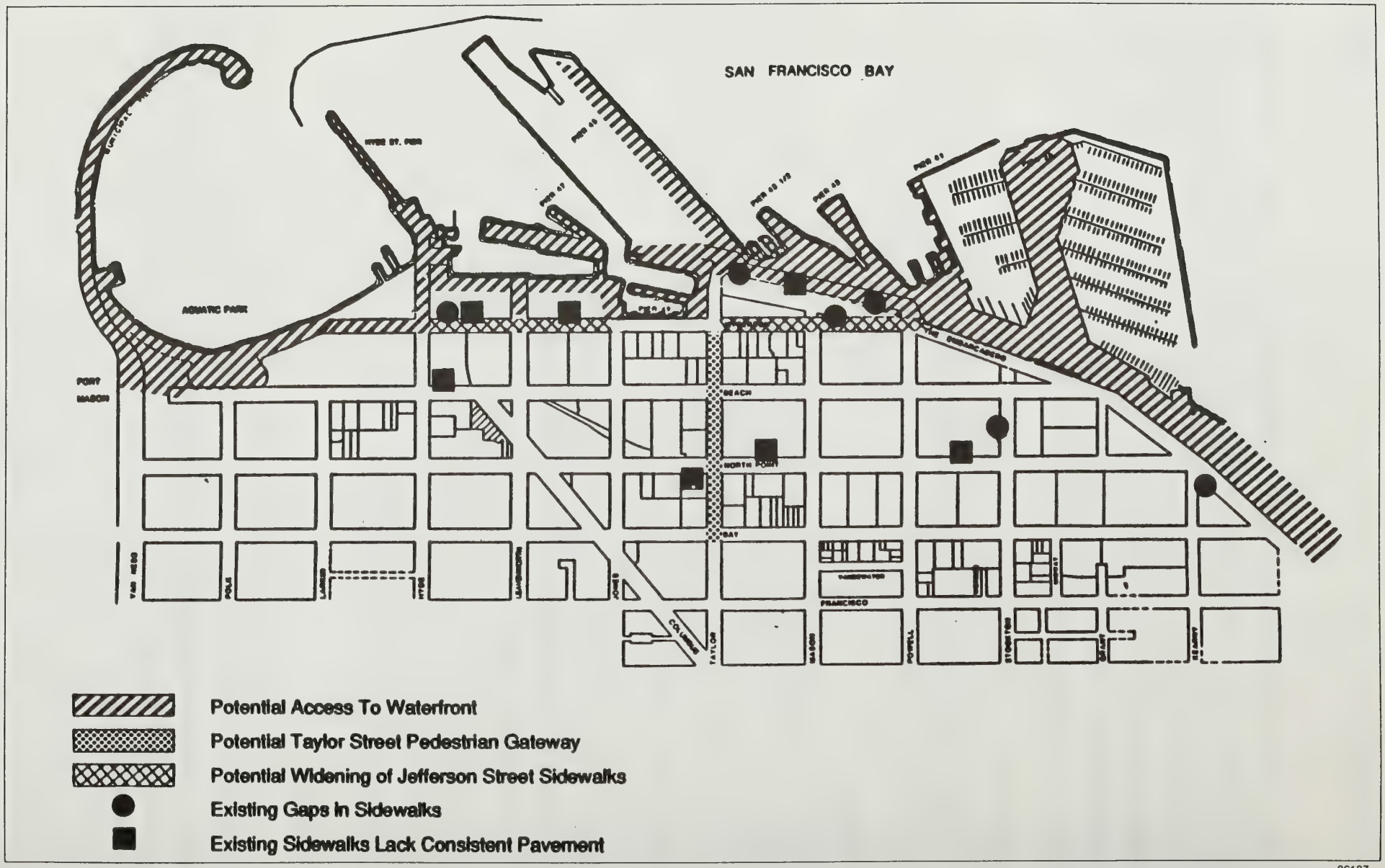
"Page 54. Last sentence in first partial paragraph is confusing. The sidewalk being described seems to be the west end of the Pier 39 park promenade in front of Pier 41. This whole section is vague. The 'effective' sidewalk between Pier 39 and the rest of 'Fisherman's Wharf,' i.e., between the Powell St. area, and say, Jones St. is very narrow and circulation is fractured and confusing. This description should be clarified." (Irene Nishimura)

RESPONSE

The sentence in question refers only to the Pier 39 promenade area between Pier 39 and Powell Street, where there is a sidewalk adjacent to The Embarcadero, a sidewalk adjacent to the water, and a wide, landscaped pedestrian walkway between the two sidewalks. West of Powell Street along this pedestrian route, the walking space is narrow, ill-defined, and generally confusing.

FISHERMAN'S WHARF PEDESTRIAN CIRCULATION

FIGURE C&R 15



SOURCE: DKS ASSOCIATES

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Page 54, first partial paragraph, the last sentence is revised to read as follows:

"Between Pier 39 and Powell Streets, the total effective sidewalk width is about 40 feet, including the sidewalk adjacent to the street, the sidewalk nearest the water, and the 20-foot wide pedestrian walkway in between these two sidewalks."

Tour Bus/Passenger Loading

COMMENT

"Off-street loading is grossly insufficient." (Sue Hestor)

"At this time, there is no provision to increase tour bus and van loading zones despite the fact that this is a tourist destination." (Mary Lolli)

"Page 101, Environmental Impacts Transportation Tour Bus/Passenger Loading - Quote: 'No additional passenger loading space has been proposed.' I can't understand why the sponsor does not need additional loading space based on the other information contained in the EIR, particularly when the sponsor's EIR says that with project's estimated travel demand the transportation load split characteristics, the project would require approximately 200 feet of new passenger loading area to meet the estimated peak demand for taxi, limousine, tour bus and van loading space. If this is the case, why is no additional passenger loading space being proposed? Where do these vehicles end up parking? or stopping? is it in the traffic lanes?" (Peter Brown)

"Since the existing drop-off and pick-up area is identified as a problem (DEIR Page 101) why is no additional space provided?

"No additional passenger loading has been proposed but it has been analyzed (DEIR Page 101). If the loading area is needed why is it not provided?

"Additional passenger loading areas for buses, taxis, private vehicles, etc., are identified as being needed even under existing conditions. The project will increase the need for them, therefore, provision should be made for additional passenger loading areas." (Peter Martin)

"Certainly the Wharf area needs additional bus loading and unloading areas as well as an area for the tour buses to park. However, I do not think that the taking of park area/open space along the water's edge for this purpose is the best alternative." (Peter Brown)

"The DEIR provides a discussion of several alternatives for increased tour bus and passenger loading areas (pp. 144-146). However, all the proposals have negative impacts in relation to other plans currently being developed in the area. Adding additional loading areas opposite the North Point/Kearny intersection would impact the park area required by BCDC in the original conditional use permit granted to Pier 39. The Embarcadero Parkway project will also affect this area and any Underwater World design should conform to the requirements of that project." (M.K. Veloz)

"Tour Bus/Passenger Loading: This is critical to the impact analysis. It is clear that without an adequate solution to this problem, traffic circulation may be worsened, or the F-line may be blocked or both. If a new or expanded drop-off is created, it would likely diminish public access and park areas mandated by BCDC and DCP. The mitigation techniques should show typical 'trade-offs,' not just a drawing showing where the turn-out could be built, but overall - how traffic will work, F-line and where/how park and public access replacement could be built.

"In addition it is inappropriate to suggest that tour buses could be put at Pier 35 or 45 without any mention of how these piers function as maritime uses, and without any discussion with Port staff about such use of these piers." (Richard Weiderhorn)

"Currently, buses dropping off passengers at Pier 39 frequently overflow onto the Embarcadero blocking traffic lanes and impeding circulation within the area. The project will generate additional tour bus volume. However, sufficient tour bus loading areas are not provided in the design. When the F-line Historic Streetcar is operational this problem will be further exacerbated. The DEIR should evaluate the impacts of the increased tour bus activity on traffic congestion on the Embarcadero and mandate appropriate mitigation measures." (M.K. Veloz)

"Does the traffic analysis consider the impact of drop-off traffic blocking the right lane of The Embarcadero which happens currently?

"How much more will the right lane of The Embarcadero be blocked after construction of the project? What impact will this have on traffic conditions?" (Peter Martin)

RESPONSE

The EIR identifies the need for approximately 200 feet of additional loading space to accommodate the project's estimated demand for new loading space for taxis, tour buses, and limousines, and discusses the potential impacts if no new loading space is provided to meet the project demand. The EIR identifies several potential locations for additional loading space on pages 144-146 in the mitigation section. One proposed location, an extension of the existing Pier 39 loading area to the west underneath the pedestrian overcross, would be under the control of the project sponsor. The remaining potential locations could not be implemented solely by the project sponsor.

Since the publication of the DEIR an agreement has been reached to provide the additional tour bus/taxi passenger loading space needed to meet the project's estimated demand as shown in Figure EIR 32A, p. C&R-158. To reflect the mitigation measure which has been included in the project, change DEIR page 103, first partial paragraph, last sentence as follows: "A mitigation measure to reduce this impact is described in Chapter V, Mitigation. The project sponsor has agreed to implement this measure."

- On page 144 of the Draft EIR, delete the heading MEASURES NOT INCLUDED IN THE PROJECT. On page 146 of the Draft EIR, insert the following above "AREAWIDE MITIGATION MEASURES":

  - "Another potential location would be in The Embarcadero. The existing tour bus area north of the Embarcadero could be removed and the area converted to open space. The position of the Embarcadero would be shifted to the south into a portion of Seawall Lot 312. Between Beach and Stockton Streets, the new cross-section of The Embarcadero from north to south would be as follows:

    - o 13 feet exclusive F-line right-of-way;
    - o 8 feet raised passenger island for tour buses and taxis;
    - o 10 feet dwell lane to be used by tour buses and taxis for delivery and pickup of passengers;
    - o two 11-foot northbound travel lanes.

- "With this plan, tour buses and taxis would continue to approach Pier 39 northbound on The Embarcadero and, after completing passenger alighting or boarding activities at the new and expanded passenger loading area, would proceed along The Embarcadero. Tour buses and taxis would not cross the exclusive F-line streetcar right-of-way situated at the north curb of The Embarcadero. The realigned Embarcadero would preserve the same level of accessibility to other Fisherman's Wharf businesses which presently exists. This plan would require actions by the Department of Public Works as well as by the project sponsor."

Because this mitigation is now proposed as part of the project, the third paragraph on page 150 is deleted.

COMMENT

"Were additional drop-off and pick-up trips considered in the analysis? People parking in the 80 Francisco Garage are likely to drop-off and pick-up passengers rather than forcing them to walk the long way from the Garage to the Aquarium.

"The mode split analysis assumes that more patrons will come by tour bus, taxi, etc. Were these additional trips considered in the need for additional drop-off/pick-up area?

"How were traffic impacts determined (with or without the additional loading area)?" (Peter Martin)

RESPONSE

The need for additional loading space was based on estimates of the number of additional new taxi, tour bus, and limousine trips to the project site during the PM peak hour. These trips were considered in the traffic analysis, both as new vehicle trips and as constraints on intersection capacity. The majority (well over 95%) of the vehicles coming to the Northern Waterfront park first before letting off passengers. The impact of the few vehicles dropping off passengers would not affect intersection traffic operation. If adequate loading areas are provided and enforced, traffic disruption can be avoided. A passenger area for the shuttle bus to and from the 80 Francisco Garage is designated adjacent to the new auto queueing area within Seawall Lot 312. This passenger area may also be used by auto drivers to drop off passengers.

The intent of incorporating a "wave-off" policy for the Pier 39 garage would be to divert drivers directly to the 80 Francisco Garage. Drivers continuing on to drop off passengers in front of Pier 39 would be adding several minutes onto their trip unnecessarily and could find it difficult to reach the 80 Francisco Garage. Drivers directed to 80 Francisco from Beach Street would be strongly encouraged to turn south to 80 Francisco immediately.

Transit

COMMENT

"Page 50. It lists the buses and Muni use. I wondered if they run the same on weekends as during the week or whether there is not as much available during the week." (Commissioner Bierman - Hearing)

"The draft EIR in its discussion of available public transportation to the Northern Waterfront fails to adequately address the issue. The draft EIR does not address the actual availability of public transportation, especially with regard to weekend and holiday scheduling that would to some degree alleviate the need or requirement for private transportation. The draft EIR shows photographs of various municipal bus and/or Muni-Metro lines, but fails to note that most of the lines pictured and referenced do not in fact, directly serve the Northern Waterfront." (Robert Pickard)

RESPONSE

Five MUNI routes serve the Northern Waterfront, including the 15-Third, 19-Polk, 32-Embarcadero, 39-Coit, and 42-Downtown Loop. All these routes operate on weekends, with all but the 32-Embarcadero operating at least until 12:30 AM during weekend evenings. All-night service is provided by the 15-Third. The 32-Embarcadero stops directly in front of Pier 39. The closest stops for the other four routes are at:

- 15-Third –terminal on Kearny between Bay and North Point;
- 19-Polk – southeast corner of Larkin at Beach;
- 39-Coit – northwest corner of North Point at Mason;
- 42-Downtown Loop – northwest and southwest corners of North Point at The Embarcadero.

The Powell-Mason cable car line terminates just south of the Taylor/Bay intersection, about six blocks from the project site. The Powell-Hyde cable car line ends at Victorian Park, about seven blocks from the site. The weekend frequencies of each of these routes is shown in Table C&R 7 below. This information reflects the October 1988 service changes. The pictures shown in Appendix B are intended to illustrate the effects of peak loading conditions, not to show the actual vehicles which serve the Northern Waterfront Area.

COMMENT

"Page 53. We need to know how long it takes to get from the Sunset, the Excelsior, Richmond, et cetera, to the Wharf. I have asked for it before. It says in here that generally people don't take transit, and at some point the city just has to look at why they don't take transit." (Commissioner Bierman - Hearing)

RESPONSE

On weekends MUNI does not operate express routes, so all bus travel would be on local lines. According to MUNI information service, travel from the outer areas such as the Richmond and Sunset districts on local routes could take up to an hour,[17] and generally would involve at least one transfer. Travel time from the Excelsior district is about one hour via direct service on line 49. Direct, non-transfer service is available from Excelsior to the western Wharf area along Van Ness Avenue (line 49), from the Bayshore districts to the eastern Wharf area along North Point Street (line 15), and from Potrero Hill to the western Wharf along Beach Street (line 19). Residents in areas such as the Sunset, West Portal, Park Merced, Parkside, Castro, Fillmore, and Haight districts could take local transit to MUNI subway stations, ride the K, L, or M subway lines to Van Ness or Embarcadero Station, and from there transfer to the 42-Downtown Loop to reach the Wharf. Similarly, residents of the Mission, Bernal Heights, and Glen Park could take BART to Embarcadero Station and the 42-Downtown Loop from there to the Wharf. For all but downtown residents, however, traveling to the Wharf via transit involves transfers and considerable travel time disadvantages.

TABLE C&R 7

MUNI FREQUENCY GUIDE
AVERAGE TIME IN MINUTES

	Weekday				Saturday			Sunday			Owl
	7-9	9-4	4-6	Eve	7-9	9-6	Eve	7-9	9-6	Eve	1-6
PH Powell-Hyde*	10	6	6	8	12	6	8	12	6	8	--
PM Powell-Mason*	10	6	6	8	12	6	8	12	6	8	--
15 Third	7	10	6	15	10	10	15	10	10	15	30
19 Polk	10	15	15	15	20	20	15	20	20	15	--
32 Embarcadero	12	15	12	--	20	20	--	20	20	--	--
39 Coit	30	20	20	--	30	20	--	30	20	--	--
42 Downtown Loop	10	12	9	20	20	20	20	20	20	20	--

*Cable Car.

NOTE: Evening period ends at 12:30 AM for Powell-Hyde cable cars and 42-Downtown Loop, 1:30 AM for 19-Polk, and 7:45 PM for 39-Coit.

Source: "MUNI Service Changes Effective October 1, 1988," San Francisco Municipal Railway, Community Affairs Department.

COMMENT

"In the future year cable car trips were assigned to the proposed F line historic trolley (DEIR Page 89). It is unlikely that the historic trolley will capture that high a mode split of visitors. The cable cars are internationally famous and connect the wharf directly with thousands of downtown hotel rooms. The F line trolley, while attractive in its own right, would not provide as convenient a connection to hotels, nor would it be unique. Many cities operate historic trolleys (e.g. Seattle). Before assuming historic trolleys would attract all the potential additional cable car riders, some more detailed analysis should be prepared." (Peter Martin)

RESPONSE

The historic F-Market Line could attract less than the total share of project cable car riders. The worst case would occur if the F-line attracted no riders from the cable car, in which case waiting times for cable cars could increase from 50-65 minutes today on summer weekends to 60-80 minutes in the future due to the project and cumulative development. In a trial operation of the F-line between September 11, 1987 and October 17, 1987, ridership averaged approximately half of capacity. The relatively high ridership during the trial operation period indicates acceptance of the F-line by visitors to the Northern Waterfront, since little promotional or route information was distributed prior to the trial period.[18] The route would prove convenient to another group of tourist/users such as hotels along Market Street (i.e. the Sheraton Palace, Yerba Buena Center, Hyatt Regency) which is not convenient for cable cars. Due to delays in using cable cars, many people may make one leg of the trip on the cable car and the return trip on the street car. See also the discussion of mode split on page C&R 97.

COMMENT

"Muni has the intention of putting an F line down Market, around the Embarcadero and through that area. More traffic, more traffic congestion is going to interfere with the operations of that line, or very well could interfere with the operations of that line." (John Holtzclaw - Hearing)

"The F line is being proposed to come to Fisherman's Wharf. And in certain proposals they're proposing to us in our area, they will be taking up to two lanes on the Embarcadero. With the addition of more cars coming in because of the aquarium, will we bottleneck the Embarcadero?" (Nunzio Alioto - Hearing)

RESPONSE

In general, the F-line would operate in an exclusive right-of-way throughout the Fisherman's Wharf area. The only exceptions to exclusive F-line right-of-way treatment would be the following: on The Embarcadero between Beach and North Point Streets, where the F-line would operate in the second (curb) lane of southbound traffic due to space constraints; on Jefferson Street for a short distance between Taylor and Jones

Streets; and on Beach Street approaches to intersections (approximately 100 feet each) to facilitate the eastbound right turn movement. The planned alignment for the remaining exclusive F-line segments is outlined below.

Westbound, the F-line would operate in the north curb lane on The Embarcadero north of Beach Street. The Embarcadero would also have two northbound travel lanes and one southbound travel lane in this segment. On Jefferson Street the north curb lane would be reserved for the F-line. Two westbound travel lanes and one parking/loading lane would also be provided. The F-line would operate on the west side of Jones Street, where the F-line terminal would be located. This segment of Jones would also have one southbound travel lane, one northbound travel lane, and one parking lane.

Eastbound, the south side of Beach Street would be reserved for the F-line except within 100 feet of intersections as noted above. Beach Street would have one travel lane in each direction, the F-line streetcar right-of-way at the south side curb, parking and loading at the north side curb west of Powell, and an access lane for the Pier 39 Garage at the north side curb east of Powell.

Added vehicle traffic due to the project would not have significant negative impacts on the operation of the F-line along the Embarcadero. The project proposes mitigation which addresses passenger loading and an exclusive F-line alignment.

COMMENT

"Page 142, Mitigation Measures Traffic/F-Line Conflicts - The EIR should be revised to address the chosen configuration of the F-line. Said configuration would be double track down Embarcadero, single track continuing west on Jefferson Street to Jones, south on Jones to Beach Street, east on Beach to the Embarcadero, joining double track down the median of the Embarcadero. With this configuration, which has been approved by City Planning, Public Utilities Commission, Fisherman's Wharf Merchants Association & Citizens Advisory Committee, we think we need to look at the egress/ingress plan for the garage at Pier 39 instead of half a dozen alternatives." (Peter Brown)

RESPONSE

Four of the potential Pier 39 external circulation schemes (Alternatives 2, 3, 4, and 5) include the preferred alignment of the F-line. Alternative 1, a double track alignment with the second Pier 39 access an exit point at Stockton/Beach, is the only garage circulation alternative that the preferred alignment eliminates.

COMMENT

"Development of the F line along the waterfront is a City commitment. Although certain aspects have not yet been decided, much of it is already generally known. Please provide similar information for that project, including estimated dates when contruction [sic] will be underway and when it will be completed." (Sue Hestor)

RESPONSE

The F-line is currently undergoing environmental assessment and is in the preliminary design stage. Preliminary engineering, following completion of the environmental assessment, will be finished during fiscal year 1988-89. Final engineering will be completed in late 1990 or early 1991. Construction is expected to be completed in late 1992.[19]

COMMENT

"p. 89: Last paragraph, last full sentence on page 89: Explain how the F-line would affect the lane configurations with the addition of a second garage entrance." (Irene Nishimura)

RESPONSE

The preferred F-Line alignment of a loop track along Jefferson Street and returning on Beach Street would not restrict possible lane configurations with the addition of a second garage access. A double track alignment would allow two lanes only on The Embarcadero between Beach and Powell Streets, which would permit two northbound lanes or one in each direction.

COMMENT

"p. 140: Figure 32 (or somewhere) should show the F-line and how it would affect these different schemes. Triangular lot shown as Pier 39 garage lot is actually two lots; one with garage, the other park/open space (also on p. 32)." (Irene Nishimura)

RESPONSE

The two alignments of the F-line are shown in Figure C&R 16 below. Of the two alignments considered during the development of the EIR, the single-track configuration running west along Jefferson Street to Jones Street, south of Jones Street to Beach Street, and returning eastbound on Beach Street to The Embarcadero is now the preferred alternative. The double-track alignment is no longer being considered.

COMMENT

"The Draft EIR states that the project would create additional demand on the cable car and that the cable car cannot meet the demand because it's already at capacity. It then states or assumes that the F Line will alleviate some of the cable car demand.

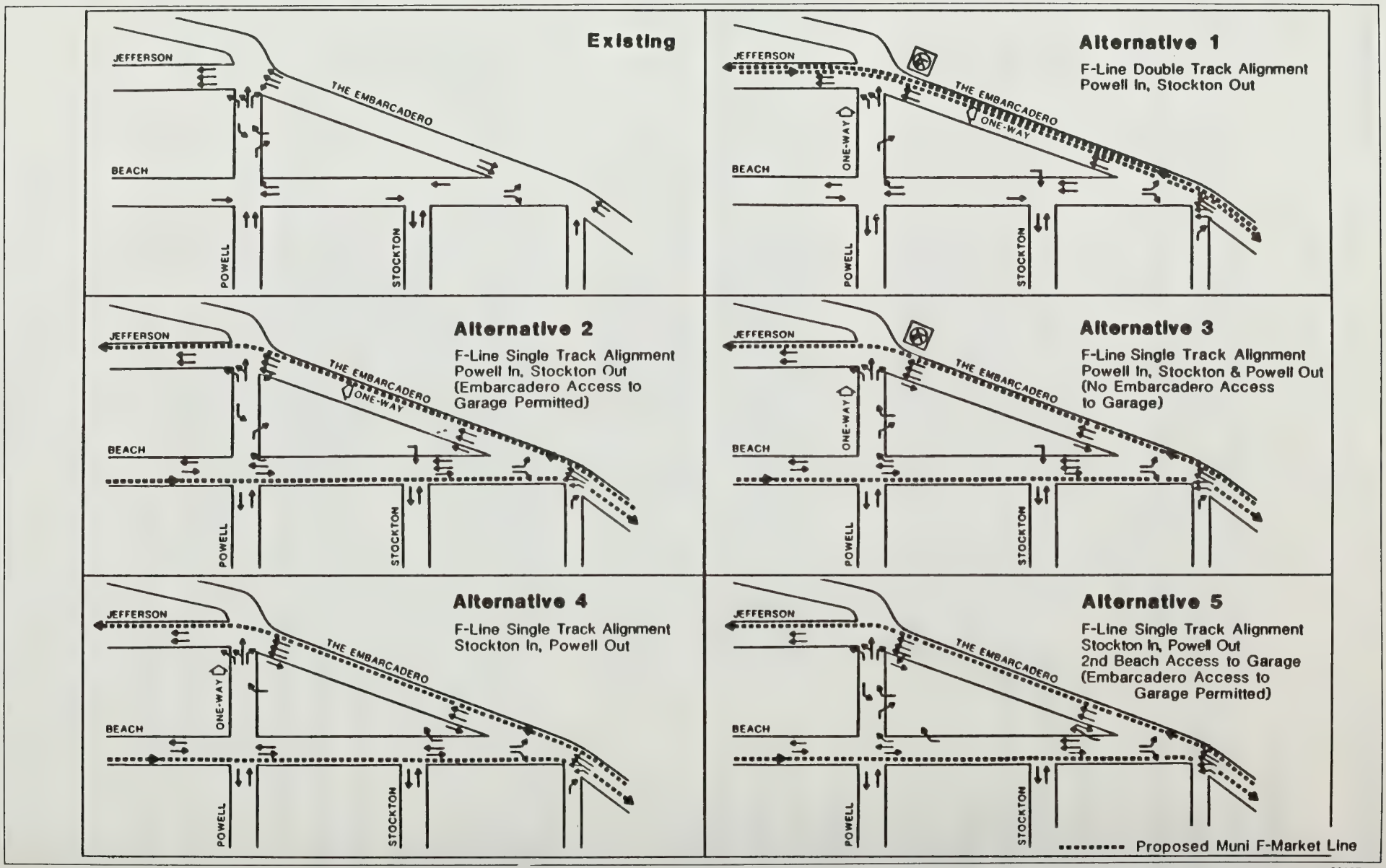
"I guess my question is, what happens if the F Line is not established or it is delayed? What will be the impact of that?" (Commissioner Morales - Hearing)

RESPONSE

If the F-line is delayed or cancelled, the primary impact would be increased delays for cable car riders. Existing delays could increase by 10 to 15 minutes due to the project's cable car demand, to a total of 60 to 80 minutes during peak summer weekends. The impact of no F-line and no additional cable car ridership from the project was also assessed. In the EIR, Table 8, page 92 summarizes the person trips by mode of transportation in the initial years of the project where access to cable cars is limited due to capacity. Project trips were assigned to other travel modes based on surveys of Wharf area retail customers. Survey details are provided in the Northern Waterfront Traffic and Transportation Study - Final Consultant's Report, City and County of San Francisco, Department of City Planning, by DKS Associates, March 1987, pp. A-14 to A-27. These surveys were augmented by Monterey Bay Aquarium mode split data, which indicated that

PIER 39 GARAGE EXTERNAL CIRCULATION SCHEMES

FIGURE C&R 16



SOURCE: DKS ASSOCIATES

NOT TO SCALE

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project visitors would make a higher share of trips by tour buses and vans than retail customers. Traffic and parking impacts were discussed in the report for this scenario.

COMMENT

"Since the current wait of the cable car is 55 to 60 minutes, what kind of wait is expected with this project added?" (Commissioner Bierman - Hearing)

RESPONSE

The project could add a minimum of 10 to 15 minutes to the existing waiting times during the peak summer tourist season if the cable car patronage of project visitors is similar to other Wharf visitors. Waiting time during peak periods could become 60 to 80 minutes.

Parking

COMMENT

". . .the proponent of the project would add over a hundred parking places during the week, over 400 parking places on the weekend. More parking places are going to attract more cars, more traffic congestion." (John Holtzclaw - Hearing)

"Pier 50, Environmental Setting - Transportation - Congestion on the Embarcadero results from long queues of vehicles waiting to enter the Pier 39 Garage. This seems to indicate that a disbursement of attractions to other parts of the Fisherman's Wharf area may be a better planning decision as this would take traffic to different destinations rather than have it all queue at Pier 39." (Peter Brown)

RESPONSE

Much of the congestion in the Wharf area as a whole and particularly in the vicinity of the Pier 39 garage is the result of visitors seeking parking during periods when parking is essentially fully occupied. Providing additional weekend parking at 80 Francisco could serve to intercept some drivers before they reach the waterfront, thereby reducing the number of drivers circulating through the area looking for parking. The most significant operational change to reduce congestion is to eliminate queueing of garage traffic on the Embarcadero. Waving off drivers from the queue at the Pier 39 garage and directing

them to parking at 80 Francisco would help to disperse the queue of vehicles waiting to enter the garage, which is a major cause of traffic congestion along The Embarcadero on peak weekends.

COMMENT

"The garaging addition probably wouldn't work that is indicated in the EIR. According to the information at the CAC, 1100 spaces at the Pier 39 garage fill up first in the waterfront area, and if you are going to use 80 Francisco as the spillover, 80 Francisco is only available, as it states, weekends and nights. Now, what happens in the summer weekdays?" (Stuart Morton - Hearing)

"On Page 17, talking about the parking on Francisco Street. I think all the comments that have been made are important as to how you get there. What about during the week?" (Commissioner Bierman - Hearing)

"Page 98, Environmental Impacts Transportation - Project sponsor proposes to utilize AMPCO parking located at 80 Francisco to add 400 spaces to the weekend parking supply in the northern waterfront. Two points: First of all, it's only weekends and during many parts of the year - summers, holiday seasons particularly - we need weekday parking as well." (Peter Brown)

". . .the draft EIR does not adequately represent the increased weekday and summer peak-period parking. We challenge the 83% fill level in the Pier 39 Garage on weekends -- waiting lines two blocks long on weekends in either direction belie this figure." (Robert Pickard)

RESPONSE

The background traffic study contains summer weekday occupancy information for off-street parking in the Wharf area. As detailed in Table A-6 and Figure A-1 of the background study, DKS Associates surveyed over 4,600 public off-street stalls in the Wharf area Thursday, July 9, 1987, between 1:30 PM and 4:30 PM. Seventy percent of the spaces were occupied during this period (1,350 vacant stalls), indicating that there is parking available during summer weekdays to accommodate the project's peak weekday

demand of 290 spaces. Parking available in the Pier 39 garage and other garages in the area would be able to accommodate the project's weekday parking demand, based on the summer weekday occupancy rates observed. The City has recently installed signs at key locations along The Embarcadero directing drivers to other Northern Waterfront parking garages in addition to the Pier 39 Garage. No specific parking mitigation measures would be necessary to meet the project's weekday demand for weekday conditions.

The Pier 39 garage was 86% occupied during the July 9, 1987 weekday survey. The 83% occupancy for the Pier 39 garage cited in the comment refers to weekday (Tuesday, July 5, 1988) occupancy rather than the weekend as stated.[20] Based on review of garage records, this level of occupancy was normal for summer weekdays.

COMMENT

"Page 26, Project Description - Project sponsor requests a reduction, per Section 151 of the City Planning Code, of the 74 required additional parking spaces. If someone thinks no additional spaces are required, they should observe the existing condition in the immediate project area which indicates that parking is of extremely high demand - in fact long queues exist throughout the summer (June through September) and during holiday periods throughout the balance of the year." (Peter Brown)

RESPONSE

The Pier 39 garage meets City code requirement for the existing uses at Pier 39, and the additional code requirements of the proposed project (refer to pages 97 and 98 of the EIR). The project sponsor has not requested a reduction in code required parking. In addition, the project sponsor would cause 400 parking stalls to be opened on weekends through agreements with the AMPCO 80 Francisco garage. The provision of parking to meet peak weekend demand on the outskirts of the Wharf area would help alleviate congestion caused by drivers circulating through the Wharf seeking parking.

The second and third sentences of the first paragraph on p. 26 of the EIR will be deleted to reflect this change.

COMMENT

"Page 54, Environmental Setting - Transportation & Parking - Paragraph 3 states that a survey was accomplished in July of '87 and another in July of '88. No indication as to the time of day that the survey was taken. The fact of the matter is this garage is 100% occupied the better part of the day when the tourists visit Fisherman's Wharf. The garage typically is full by 11:30 AM and remains full until late afternoon -- 3:30 to 4:00 pm." (Peter Brown)

RESPONSE

The occupancy rates cited in the comment are applicable to summer weekends, when the Pier 39 garage is typically full from late morning to late afternoon. On weekdays during the peak month of August, weekday occupancy in the Pier 39 garage averages 88%, and ranges from less than 70% to 100%. The parking surveys cited in the EIR were taken between 1:30 and 4:30 PM. The Pier 39 garage was surveyed between 1:30 and 2:00 PM on Thursday, July 9 1987 and Monday, March 23 1987. Parking records for the Pier 39 garage over the course of several entire days from August of 1987 indicate that the weekday peak occupancy generally occurs between 1:00 and 3:00 PM. In addition to the weekday surveys, hourly occupancy at the Pier 39 garage was evaluated from 5:00 AM to midnight for the following peak summer Saturdays: August 15, 1987; August 22, 1987; August 29, 1987; and July 9, 1987. (For further details of the parking surveys cited in the EIR see the Appendix Tables A-5 and A-6 of the background traffic study.)

COMMENT

"Under a retail use, approximately, for every 500 square feet, one parking stall is required. Under a theater use, eight-to-one -- eight people, one parking stall. So, if we go back to the 900 people per hour, we are looking at 100 stalls per hour that will be needed -- per hour -- with the potential of 2700 people going through that project, if in fact they allow them to go through. Who will monitor that? And if in fact no one does monitor it, we end up with 2700 people going through there, we are talking approximately 300 plus stalls per hour needed over and above what presently exists." (Nunzio Alioto - Hearing)

"Page A-59, A-60, A-61 - Copy of the Planning Commission's Resolution for Conditional Use Permit. Within it, it calls for a 5.2 acre park which would provide adequate views of the bay from inland properties and from the park. (We seem to be giving up the open space and views to further the retail interest of the owner). Further, it states the parking garage will have a maximum capacity sufficient to cover the following: 850 spaces for the North Point Marina and 150 spaces for Harbor Tours. That's a 1000 car garage and as previously stated in the EIR, they have only built a 916 car garage. The fact is, they built less garage capacity than was allowed for the initial development, which has proven to be less than adequate to support existing uses, and now they are suggesting to add more destination retail to the Pier which will add an additional parking need, which they are not able to satisfactorily ameliorate with weekend only spaces at 80 Francisco." (Peter Brown)

RESPONSE

The parking demand calculations for the project are detailed in the Appendix of the background study and shown in Table 11, page 99, of the EIR. It is not appropriate to compare the project's parking demand with parking code requirements for theaters. The EIR assessed the parking demand and the code requirements of the project (pages 97, 98 and 99 of the EIR). Additionally, parking supply provisions arranged by the project are summarized. See also the discussion of current Conditional Use requirements on page C&R-233-234.

COMMENT

"Entrance to the parking lot presently takes up 50 percent of public streets. Are we going to give more public streets to private enterprise?" (Nunzio Alioto - Hearing)

"THD opposes parking garages that cause queuing on public streets (in either normal or peak use)." (Rod Freebairn-Smith)

RESPONSE

The current configuration of the Pier 39 garage, with a single access point for ingress and egress, creates long queues on summer weekends. The recommended project-related

mitigation measures of a second Pier 39 garage access, 400 stalls of additional public weekend parking at the 80 Francisco garage, and a "wave-off" policy to divert drivers to 80 Francisco Street would all be measures which would reduce on-street queueing at the Pier 39 garage.

COMMENT

"Approximately 70 percent of the patronage to the aquarium are identified as being people who are already in the area. And our question is: Would that 70 percent, how does the aquarium change the traffic circulation and access of that 70 percent that is in the area and what does it do to their parking? Are people going to park an additional two hours longer for each visitation into the area? If they do, that has a substantial impact on the total demand for parking. It's not so much how many cars are coming into the area, but how long they're parking that determines what the total accumulation is in an area." (Peter Martin)

RESPONSE

The parking analysis for the project assumes that visitors generally would make longer stays by incorporating conservative assumptions of daily attendance into the demand calculations; longer stays would increase parking demand by reducing parking turnover as analyzed in the EIR. The peak parking demand for the project was estimated for the time of peak parking demand. The impact of longer stays would generally impact the non-peak periods (before or after) and would not substantially change peak demand conditions represented in the EIR.

COMMENT

"Page 144. Ten to twenty minute parking delays now. How does this affect the wharf merchants?" (Comm. Biermann - Hearing)

RESPONSE

The proposed mitigation measure would reduce delays experienced accessing Northern Waterfront parking. The effect of a 10 to 20 minute delay on merchants is felt today with current on-street queuing practices.

COMMENT

". . .Department of City Planning Staff (p. 97) has identified the project as merely a retail use (T-shirt shop, cookie store, restaurant, etc.) like those already in operation at Pier 39. Such an evaluation grossly underestimates the parking requirements for an attraction that charges admission and that has the capability of generating up to 1,560 new daily vehicle trips into the area." (M.K. Veloz)

RESPONSE

City staff has identified the project as a retail use only for purposes of establishing a parking requirement. This is an administrative process relative to the zoning code and is not necessarily comparable to demand estimates which measure the actual parking needs of the project. The parking demand discussed in the EIR is based on estimated maximum attendance and does not relate to code requirements.

COMMENT

"CPC resolution 7551 (p. A-60) states that 1,000 parking spaces are required for Pier 39 already. This doesn't match with statement on pp. 97-98 (857 spaces), where it is assumed that the garage has excess parking to be devoted to the aquarium's parking needs." (Richard Weiderhorn)

RESPONSE

The original conditions of approval provided for a "parking garage with a maximum capacity sufficient to cover the following: 850 spaces for North Point Park/Marina and 150 spaces for Harbor Tours." As described in the EIR pp. 97-98, the existing uses at Pier 39, including the marina, were evaluated according to the City Planning Code to determine existing code requirements. The garage presently has sufficient parking to meet the code requirements of the existing uses in addition to the aquarium. This code issue is distinct from the issue of actual parking supply and demand.

The EIR does not assume that "the garage has excess parking to be devoted to the aquarium's parking needs" but does cite occupancy surveys of the garage which indicates that there is some parking available during summer weekdays. However, there is not

enough parking available to meet the peak weekday project demand. In order for the garage to satisfy the peak weekday project demand, additional parking would be needed through such measures as restriping to increase the number of compact stalls, reconfiguring circulation to gain additional stalls, and use of valet parking on peak weekdays. With these measures in place it would be possible to meet the entire weekday project demand with the Pier 39 garage.

COMMENT

"What percentage of cars parking in the garage can be classified as compact?" (Peter Martin)

RESPONSE

Approximately 54% of the 937 spaces in the Pier 39 garage are currently compact stalls.[21] Based on numerous site observations, about two thirds of cars using the Pier 39 garage could be classified as compact or subcompact cars.

COMMENT

"Page 98 of the DEIR refers to Appendix B for off-street parking survey details. No such details are provided in Appendix B." (Peter Martin)

RESPONSE

The survey details were contained in the Appendix of the background traffic study and also reproduced below, in Figure C&R 17 and Tables C&R 8 and 9. In order to reflect changes in the supply of parking spaces at location #3 (Travelodge) which lost ten spaces in order to provide handicapped accessibility, the figure "266" on line three of Tables C&R 8 and 9 is changed to read "256." Due to the construction of a new hotel at location #14, that line is deleted from Tables C&R 8 and 9 and the lot shown on the Figure C&R 17 at the southwest corner of Taylor and Northpoint is removed. The column totals on Tables C&R 8 and 9 are changed as appropriate. Because the EIR does not assume that these lots satisfy any of the parking demand generated by the project, these changes do not affect the impact analysis. This background information about parking conditions in the area is presented at the request of the commenter.

COMMENT

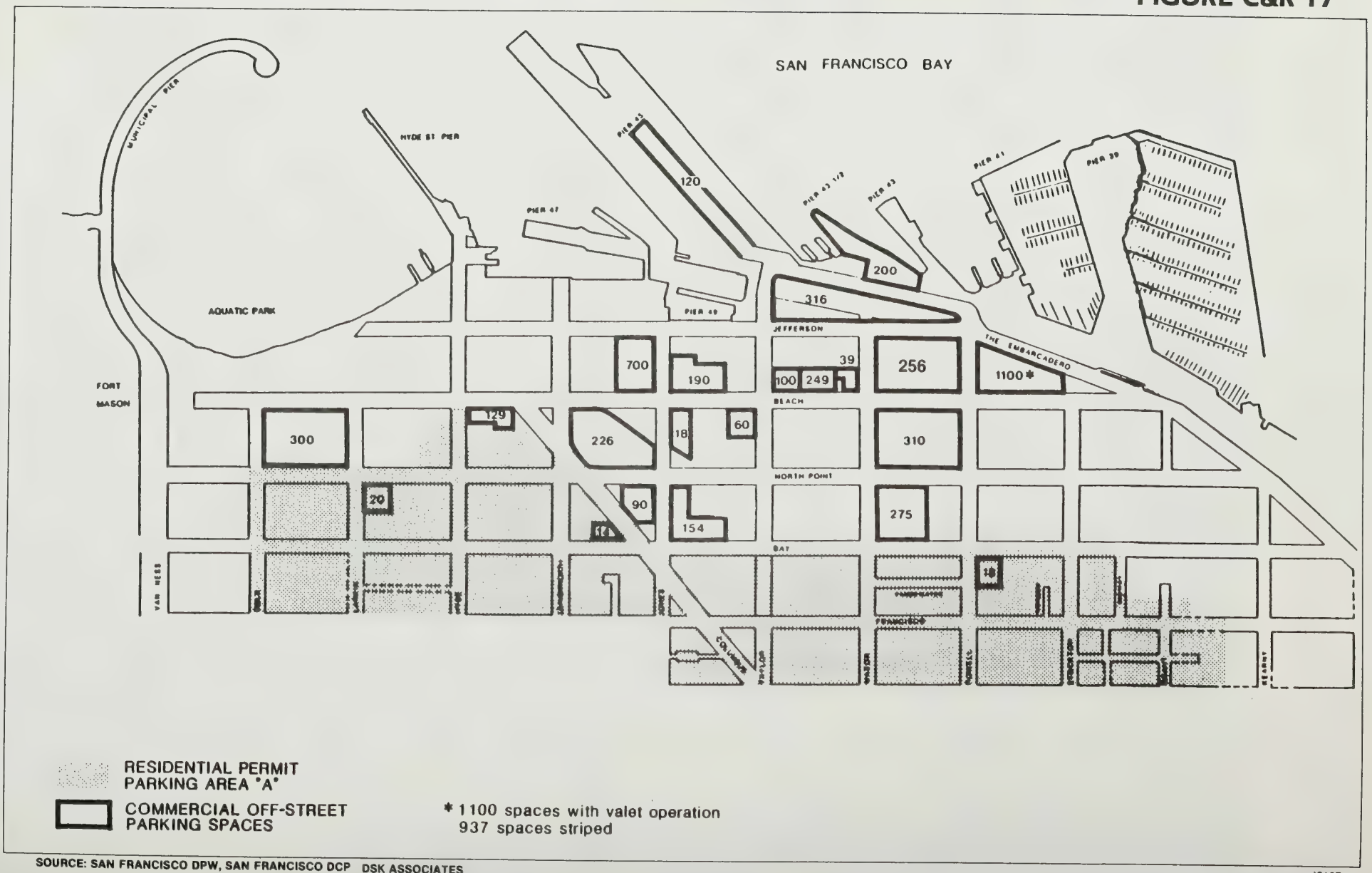
"Tables A-5 and A-6 (C&R 8 and 9) in the Traffic Study consist of an inventory of parking spaces and occupancy. Similar tables should be provided for weekend conditions." (Peter Martin)

RESPONSE

Weekend surveys of the commercial and mixed hotel/commercial parking areas were not conducted specifically for the EIR. Past weekend surveys of Wharf off-street parking facilities conducted by the Department of City Planning indicated that commercial and

PARKING IN THE NORTHERN WATERFRONT

FIGURE C&R 17



SOURCE: SAN FRANCISCO DPW, SAN FRANCISCO DCP DSK ASSOCIATES

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• TABLE C&R 8

TABLE A-5

WEEKDAY PARKING SURVEY: FISHERMAN'S WHARF AREA
MONDAY, MARCH 23, 1987

Lot Number (See Map)	Time	Number of Stalls	Observed Number of Vehicles		Percent Occupied
1 (Pier 39)	1:38	937	572		61%
2	1:52	200	154		77%
3	1:20	256	91	Hotel	61%
	1:23		70	Public	
4	1:10	310	144	Sheraton	46%
5	12:50	275	82		30%
6	12:45	18	8		44%
7	2:00	316	397		126%
8	2:03	39	23		60%
9	2:08	249	23		60%
10 Not open today to public			N/A		Card Entry Only
11	2:40	120	59		49%
12	2:19	190	158		83%
13	2:13	60	42		70%
15	2:46	154	91		59%
16	2:15	18	10		56%
17	2:29	700	188		27%
18	2:55	226	145		64%
19 Marriot Valet only					
20	2:48	14	8		57%
21	3:01	129	58		45%
22	3:05	20	16		80%
23	3:12	300	137		46%
Totals		4,531	2,556		56%

• TABLE C&R 9

TABLE A-5

WEEKDAY PARKING SURVEY: FISHERMAN'S WHARF AREA
THURSDAY, JULY 9, 1987

Lot Number (See Map)	Time	Number of Stalls	Observed Number of Vehicles		Percent Occupied
1 (Pier 39)	1:30	937	809		86%
2	1:50	200	143		72%
3	2:15	256	132		84%
	2:20		91	Public	
4	3:15	310	221	Sheraton	71%
5	3:25	275	153		56%
6	5:15	18	4		22%
7	1:50	316	325		103%
8	2:25	39	38		97%
9	2:35	249	136		55%
10 Not open today to public			N/A		Card Entry Only
11	2:05	120	97		81%
12	2:45	190	171		90%
13	3:05	60	58		97%
15	4:55	154	100		65%
16	3:05	18	18		100%
17	2:55	700	259		37%
18	3:20	266	205		91%
19 Marriot Valet only					
20	4:45	14	12		86%
21	4:25	129	69		53%
22	4:40	20	19		95%
23	4:35	300	132		44%
Totals		4,531	3,192		70%

mixed hotel/commercial public off-street parking areas in the Wharf are about 92% occupied during typical Saturdays in the tourist season.[22] (Commercial lots are 93% occupied, while 87% of the mixed hotel/commercial lots are occupied.) These data are on file with the Department of City Planning.

COMMENT

"Parking occupancy over time in the lots surveyed in Tables A-5 and A-6 (C&R 8 and 9) should be provided. This is especially true for the large garages such as the Pier 39 Garage which is of prime importance in this analysis." (Peter Martin)

RESPONSE

The lots included in the weekday survey are at peak summer occupancy during the early afternoon, which is when the surveys were taken. Variation in demand at the Pier 39 garage has been summarized in a series of graphs in the Northern Waterfront Traffic and Transportation Study, Appendix Figures A-8 and A-9, pages A-44 and A-45. Figure C&R 18 shows the variation in parking occupancy for Pier 39 Garage during peak weekday and peak weekend summer days in 1987.

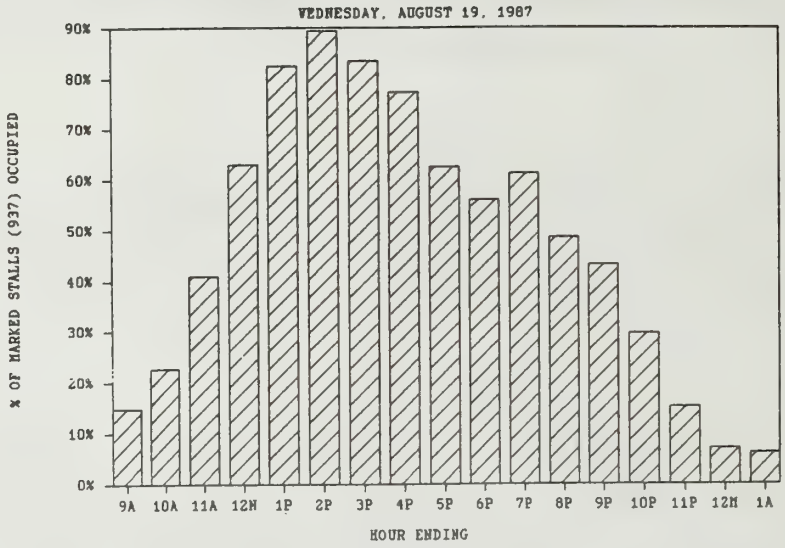
COMMENT

"p. 98: Last paragraph: This, and other studies have shown that most garages in the Wharf area are not full on summer weekdays (even weekends). Having Pier 39 personnel directing traffic coming west on the Embarcadero to the 80 Francisco St. garage which is east of the area may be counter-productive to better utilization of all existing parking facilities in the heart of the Wharf. This 'mitigation' could worsen traffic congestion." (Irene Nishimura)

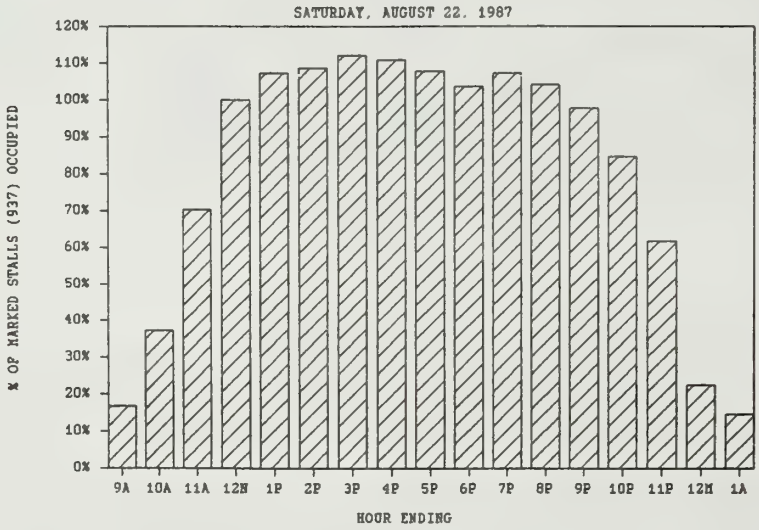
RESPONSE

The Northern Waterfront Findings Report indicates that most commercial and mixed hotel/commercial Wharf parking are at their "practical capacity" during peak weekend days. During the week there is more parking available. The 80 Francisco Street garage would provide additional <u>weekend</u> parking, when most garages in the Wharf operate at capacity and the streets in the area are extremely congested with visitors searching for available parking. It does not follow that removing vehicles from the most congested area would "worsen traffic congestion."

Pier 39 Garage
Weekday Occupancy



Pier 39 Garage
Weekend Occupancy



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Other Transportation Issues

COMMENT

"Aspects of the project the Telegraph Hill Dwellers have concerns about (for which which we would request more precise analysis than the EIR provides) [include the] adequacy of the traffic studies in their description of all the changes and impacts, particularly the area's ability to accommodate spill-over parking and increased traffic at times of peak use." (Rod Freebairn-Smith)

"The draft EIR fails to adequately consider the long-term impact of the traffic and parking considerations on the northern waterfront." (Robert Pickard)

RESPONSE

Traffic increases from the project and conditions on the surrounding areas are thoroughly addressed in the EIR, background traffic study, Northern Waterfront Findings Report and Northern Waterfront Traffic and Transportation Study.[23] The project's parking impacts are also analyzed in detail. Without a more specific comment, a more specific response cannot be made.

COMMENT

"During the construction phase, there will be dislocation of traffic patterns on the Pier. Will we still be able to drive on? We usually bring and remove equipment, stores, clothes, etc. each time we come to the boat, and it is impractical to carry these items more than a few yards. Will we still be able to park on the Pier for the short time we need to load and unload these items?" (Roy Mollard)

RESPONSE

The perimeter accessway along Pier 39 would have to remain available for marina users and Pier 39 merchants during construction.

COMMENT

"The DEIR states that construction material delivery would take place between 9:00 AM and 3:30 PM (Page 103). How will this be enforced.

"How will construction activity be limited to the period from 9:00 AM to 3:30 PM? Most construction workers start to work at 7:00 AM and many deliveries are made between 7:00 AM and 9:00 AM." (Peter Martin)

RESPONSE

The intent of the referenced statement in the EIR was to point out that loading would not take place during peak periods, specifically the evening peak period during which the heaviest traffic flows occur in the Wharf area. The majority of construction deliveries would take place early in the day. Some would take place before 9:00 AM, as construction workers generally begin their work early, e.g. 7:00 AM. Limiting hours of construction activity could be required as a condition of approval should the City Planning Commission approve the project.

COMMENT

"How many construction workers are expected to be on site during typical construction? How many can be expected to drive?

"Exactly where was it assumed construction workers would park? Will they be given discounted parking in the Pier 39 Garage or will they use on-street spaces?" (Peter Martin)

RESPONSE

All construction workers would be expected to drive. The exact number of workers is unknown at this time, but would probably be in the range of 50 to 70 workers. This would be comparable to the size of the work crew assembled for the recent seismic reinforcement of the Pier 39 garage, which was undertaken with no noticeable traffic impacts due to construction personnel.

No "exact" parking location was assumed for construction workers. They would be able to use available weekday parking in the Wharf area, including the Pier 39 garage. No plans have been made at this time to provide workers with discounted parking at the Pier 39 Garage, or other preferential parking. However, such measures could be required by the

City as conditions of project approval, and would reduce use of on-street parking by construction workers.

COMMENT

"Page 94 and throughout - Horizon year This is an obscuring term. Either footnote the definition every place you use it, explain it with another term, or refer to the page where it is fully explained. Traffic impact tables are especially a problem because many people just go to the tables." (Sue Hestor)

RESPONSE

The horizon year for the traffic analysis is 15 to 20 years following the opening of the project, i.e. 2005.

COMMENT

"The evaluation of cumulative conditions assumes the build-out of an office/retail land use mix for weekday analysis and a hotel/retail land use mix for weekend conditions. This provides a unique "worst case" assessment for each time period as these development scenarios can not happen concurrently." (Hans Korve)

RESPONSE

As noted in the comment, the purpose of analyzing cumulative buildout using the office/retail scenario for the weekday peak period and the hotel/retail scenario for the weekend peak period was to ensure that the most significant traffic impacts were assessed for both weekend and weekday conditions. In reality only one of these two conditions could occur, which would result in lower peak hour impacts over the course of a week than those described in the EIR.

COMMENT

"Were all traffic analyses in the cumulative scenario done based upon volume to capacity? Was the newer vehicle delay method used in any analysis? If not, why not?" (Peter Martin)

RESPONSE

All cumulative traffic analysis was performed using volume to capacity ratios, i.e. the Planning Method. This is the analysis method that the City has used to provide a basis of comparison and evaluation for future traffic conditions. The operations method referred to in the comment, while useful for existing situations where volumes, street operations, and delays are measureable, can be inappropriate for use with projected future conditions where delay is not known and subject to less than reliable computation. The "newer" vehicle delay method does not provide any better means of comparing or evaluating traffic conditions than those provided in the Circular 212 calculation.

Pier 39 Garage Access

COMMENT

"What circulation/Pier 39 Garage plan is recommended?" (Peter Martin)

"Page 136. Modify Existing Pier 39 Garage Access. We favor a combination of garage scheme #5 (pg. 139) and external alternative #4 (pg. 140). External alternative #5 has a fatal flaw --- reducing The Embarcadero to only one through lane at Powell Street. Garage scheme #5 would permit Powell Street to return to traditional 2-way operation between The Embarcadero and Beach, or it could remain one-way northbound with egress from the Pier 39 garage to Restaurant Row possible. Drivers approaching from the south on Powell could continue across beach and make a right-turn entry directly. If the 'new entrance' were closer to Stockton Street, drivers approaching from the south on Stockton could turn left onto Beach and then right directly into the garage. Drivers approaching from the west on Beach could: 1) turn left at Powell and then right into the garage, or 2) remain on Beach and make a left turn at the 'new entrance.' It is desirable to remove the Pier 39 garage entrance queue from The Embarcadero." (Norman Bray)

RESPONSE

- Since the publication of the DEIR, discussion has continued on a recommended new access plan for the Pier 39 Garage. The full text beginning with the second full paragraph on page 144 of the DEIR and ending before the first full paragraph on page 146 of the DEIR is presented here incorporating changes made on pages C&R-128 to 129, -154 to -156, -185 and -277, and in the first Addendum.

In April 1989, the project sponsor and Department staff proposed a garage access plan which is described as follows:

> "The existing primary ingress route via The Embarcadero with a left turn on to the counter-flow lane on Powell Street would be eliminated. A new primary entrance

with three entry ticket booths would be established at the east end of the garage adjacent to Stockton Street. This new primary entrance would be accessed via a portal opening from The Embarcadero at the eastern tip of Seawall Lot 312 or from Beach Street.

"The existing open space between Stockton and this new entry portal onto The Embarcadero would be changed to provide three garage queue lanes and a passenger loading area for a shuttle bus to the 80 Francisco Garage, with landscaping on the north and south sides of Seawall Lot 312. This area would also be designed to accommodate space for an F-line streetcar emergency turnback storage loop. Design of the new primary entrance and queueing area could also include reconfiguration of the adjacent Embarcadero with an expanded tour bus/taxi passenger loading area as described on pages C&R-128 to -129, or retention of the basic existing configuration with redesign of the Embarcadero/Beach intersection to clarify movements. The existing secondary ingress route via a left turn from The Embarcadero to Beach Street with a right turn onto Powell Street would be retained as well as a queue lane adjacent to the north curb of Beach Street east of Powell Street.

"The existing garage exit gates onto Powell Street would be retained, but the existing concrete median on Powell Street would be modified north of the garage exit to allow all movements at the Embarcadero/Jefferson/Powell intersection, or a new Beach Street entry/exit would replace Powell Street as a secondary exit. As shown on Figure 32A, if the existing garage exit on Powell Street were maintained, the existing single southbound Embarcadero lane east of Powell Street would be terminated at Stockton Street, with this traffic diverted southbound onto Stockton Street, or could continue to the intersection of Beach/Embarcadero as it does now, with modification of the intersection to clarify movements. Under the Beach Street entry/exit variation, the single southbound lane on The Embarcadero would be eliminated, and the exit from the Pier 39 garage would be on Beach Street, with secondary egress to Stockton. New traffic signals would be installed at the Beach/Stockton intersection and The Embarcadero/Beach intersection and the existing traffic signal on The Embarcadero for pedestrians and its associated pedestrian crosswalk would be relocated to the east side of The Embarcadero/Stockton intersection, all at the project sponsor's expense.

"The new primary garage entrance at Stockton would be supported by a series of parking directional signs along The Embarcadero as well as with an overhead sign at its portal. The overhead portal sign would include variable messages to reinforce a queue management strategy designed to ensure that no Pier 39 Garage queueing would extend on The Embarcadero. Weekend and holiday overflow parking at the 80 Francisco Garage would be accessed via Stockton, Powell, Kearny or the Embarcadero, to Bay Street or Francisco Street. The queue management strategy would incorporate the following operating procedures:

"Stage 1 Garage traffic would be directed to the primary entrance, with the secondary entrance also available. This condition would prevail on normal weekdays and at other times when the Pier 39 Garage is not effectively full.

"Stage 2 Entry booths at the primary entrance would be closed using physical barriers when the Pier 39 Garage is effectively full (90% occupancy). The

variable message sign would direct garage patrons to use Beach Street for access to the garage and other garages. The portal and Seawall Lot 312 queue area would remain open, but garage staff would direct patrons to either use the Beach Street access route or the 80 Francisco Garage overflow parking facility.

"Stage 3 If the Beach Street queue extends to Stockton Street, the variable message sign would be changed to direct motorists to the 80 Francisco Garage overflow parking facility only. Directional flyers would be distributed by

garage staff which show how to reach the 80 Francisco Garage overflow parking facility.

"Stage 4 If the queueing extends to the eastern edge of the Seawall Lot 312 queue area, vehicle loop detectors would activate a gate which would close access at the portal. Throughout the period during which the primary portal is closed, all garage patrons would be directed to other garages along Beach Street or the 80 Francisco Garage overflow parking facility.

"Stage 5 After queues have dissipated at the primary entry as determined by vehicle loop detectors in the queue area immediately east of Stockton Street, the portal gate would be reopened but garage staff would continue to direct patrons to use either Beach Street to other garages or the 80 Francisco Garage overflow parking facility.

"Stage 6 When occupancy at the Pier 39 Garage falls below 90%, the entry booths at the primary entrance would be reopened and the variable message signs would be changed to direct patrons to the primary entrance. This dynamic queue management strategy would be reactivated, as necessary, as indicated conditions recur."

New EIR Figures 31D and 32A show the internal and external circulation schemes under the preferred alternative for the Pier 39 Garage, which was proposed and developed by the project sponsor in cooperation with the Department of City Planning. These will be included in the EIR, following pages 139 and 140, respectively. The following paragraphs provide a qualitative assessment of the seven criteria used to evaluate the other five garage alternatives analyzed in the EIR. Table 17 of the EIR has been amended as shown to reflect future levels of service under the preferred garage alternative. The levels of service are not significantly different compared to other alternatives presented in the EIR.

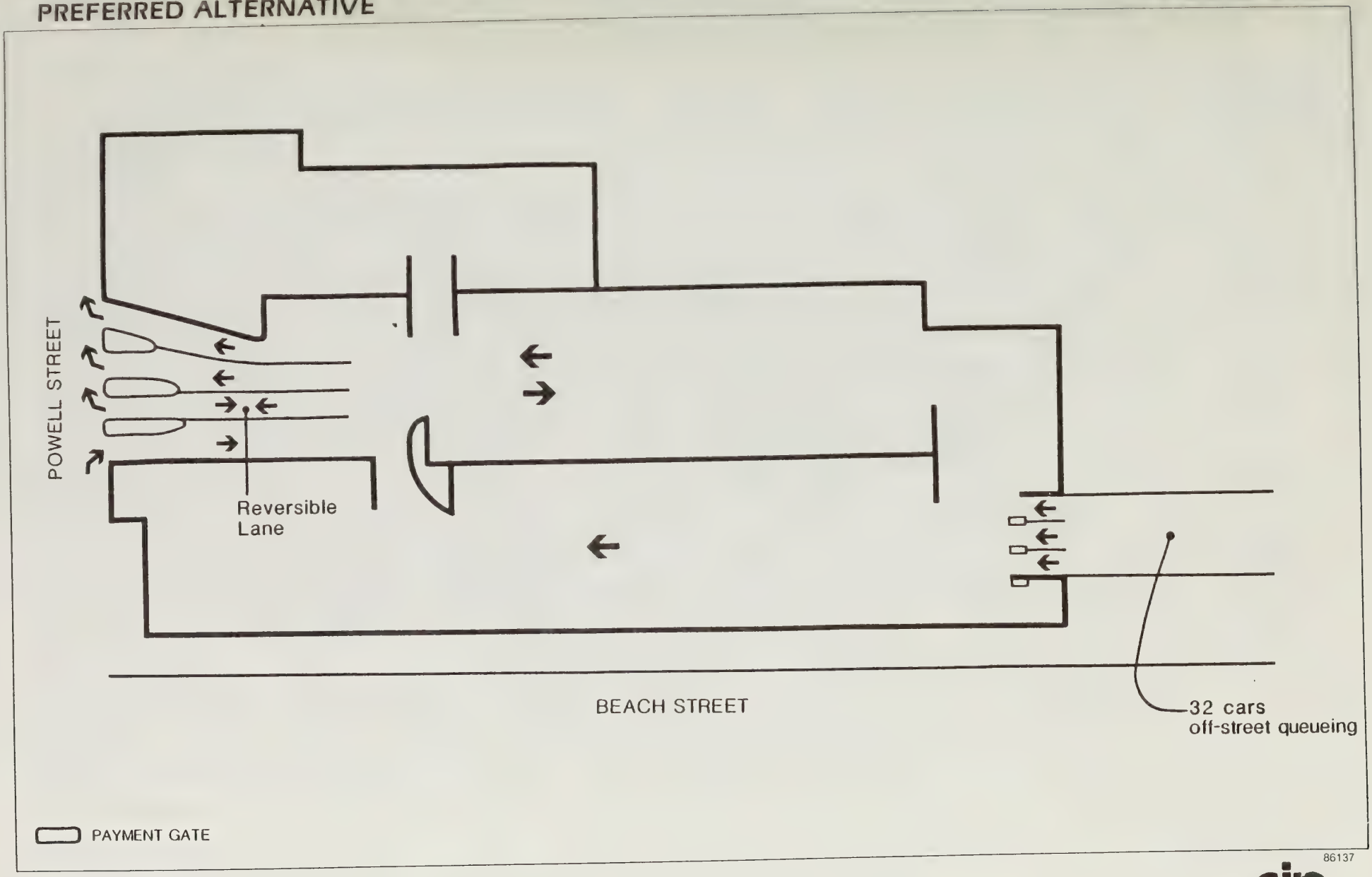
"Staff/Sponsor-Preferred Alternative

"Garage Access. The preferred alternative would be approached the same as Alternative Three, and would provide a clear path via The Embarcadero into the garage for drivers approaching from Downtown, the East Bay, and areas south of the City.

"Leaving the garage would be circuitous for all directions of travel. Drivers would turn right out of the garage onto Powell then turn right onto the Embarcadero southbound as today, but would be routed through the queuing area for the garage to Beach Street, which would be similar to driving through a parking lot due to the short distance between conflict points. Upon reaching the proposed traffic signal at the Stockton/Beach intersection, drivers would have access to all directions of travel.

• PIER 39 GARAGE EXTERNAL CIRCULATION STAFF/SPONSOR PREFERRED ALTERNATIVE

FIGURE 31D

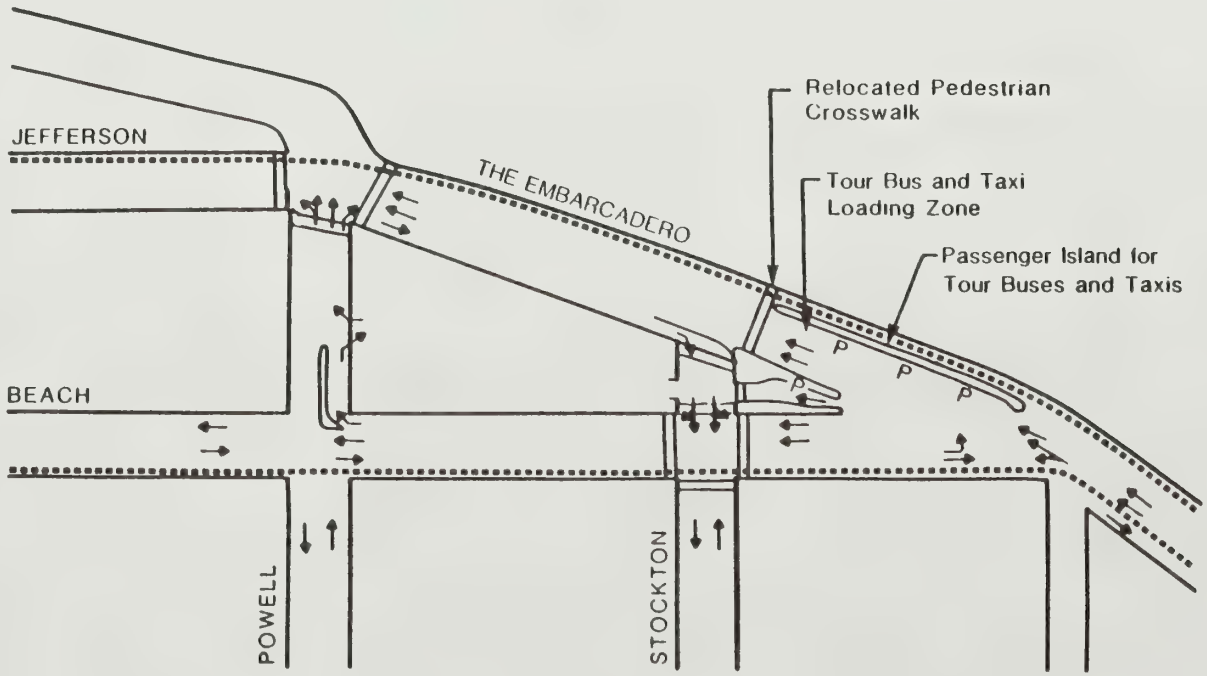


SOURCE: DKS ASSOCIATES

NO SCALE

• PIER 39 GARAGE GROUND FLOOR CIRCULATION STAFF/SPONSOR PREFERRED ALTERNATIVE

FIGURE 32A



Planned Muni F-Line Alignment
P Passenger Loading Zone
Pedestrian Crosswalk

SOURCE: DKS ASSOCIATES

NO SCALE N

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● TABLE 17

LEVEL-OF-SERVICE COMPARISON
PIER 39 EXTERNAL GARAGE CIRCULATION SCHEMES

Intersection	CIRCULATION ALTERNATIVE[1] Level-of-Service (Volume-to-Capacity Ratio) 1	2	3	4	5	Staff/Sponsor Preferred Alternative	Original CAC Alternative*	Original CAC Alternative With New Remote**	Revised CAC Alternative*	Revised CAC Alternative With New Remote**
Powell/Jefferson/ The Embarcadero	B(0.66)	C(0.75)	B(0.66)	B(0.66)	C(0.75)	A(0.56)	B(0.64)	B(0.64)	B(0.64)	B(0.64)
Powell/Beach (with existing 3-way stop)	F(1.19)	F(1.17)	F(1.18)	F(1.21)	F(1.17)	F(1.17)	F(1.21)	F(1.21)	F(1.19)	F(1.19)
Powell/Beach (with 2-phase signal)	C(0.79)	C(0.77)	D(0.80)	D(0.81)	C(0.79)	C(0.78)	D(0.85)	D(0.85)	D(0.81)	D(0.82)
Stockton/Beach (with existing N/B stop)	N/A	N/A	N/A	A/E	A/C	N/A	N/A	N/A	N/A	N/A
Stockton/Beach (with split-phase signal)	B(0.69)	B(0.69)	C(0.74)	N/A	N/A	C(0.70)	C(0.78)	C(0.78)	C(0.73)	C(0.73)
Embarcadero/Beach (with split-phase signal)	B(0.68)	B(0.68)	B(0.68)	D(0.81)	D(0.85)	B(0.68)	B(0.68)	B(0.68)	C(0.80)	C(0.80)
Embarcadero/ (with North Point split-phase signal)	D(0.83)	D(0.84)	C(0.78)	C(0.72)	C(0.75)	C(0.75)	C(0.73)	C(0.74)	C(0.73)	C(0.74)
Kearny/Bay	B(0.65)	B(0.65)	B(0.66)	B(0.65)	B(0.65)	B(0.65)	B(0.65)	B(0.62)	B(0.65)	B(0.62)
Embarcadero/Bay	C(0.77)	C(0.76)	C(0.75)	C(0.76)	C(0.75)	C(0.75)	C(0.76)	C(0.76)	C(0.76)	C(0.76)
Kearny/Francisco	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A

[1] See Figures 31, 32 and 32A for illustrations of circulation alternatives.

* Assumes that 80 Francisco is used for remote parking, comparable with all other alternatives.

** Assumes that remote parking is moved to Levi's Plaza area as recommended by the CAC and 80 Francisco is not used for remote parking.

N/A - Not Applicable

Source: DKS Associates

"On-Street Parking. There would be no on-street parking on Powell Street between Beach Street and The Embarcadero, or on Beach Street between Powell Street and The Embarcadero. This would be similar to the other garage alternatives, and would result in loss of nine existing spaces on Beach Street. The existing area on the north curb of Beach Street between Stockton and Powell Streets would be replaced by a queuing lane for the garage.

"Pedestrian Circulation/Safety. Powell Street would be one-way northbound, which would be optimal for pedestrian safety. The area at the east end of the garage would have crosswalks across the exit lane and the garage queuing area leading to a relocated signalized pedestrian crossing of The Embarcadero in front of Pier 39. The proposed main entrance would create three new crossings of pedestrian sidewalks. This would increase potential for pedestrian/vehicle conflicts. However, the pedestrian flows along the southside of The Embarcadero and northside of Beach Street are typically low which limits the potential number of pedestrian/vehicle conflicts.

"Off-Street Garage Stacking. The preferred alternative would provide off-street queuing for approximately 32 vehicles at the main entrance. Additional on-street stacking would be provided along Beach Street and Powell Street. This provides the maximum amount of vehicle stacking area of any alternative. Some of the stacking area is on public streets, along Beach and Powell Streets.

"Traffic/F-Line Conflicts. Details of the F-Line alignment were developed with this alternative which reduce the potential for vehicle/streetcar conflicts. The proposed traffic signals at Embarcadero/Beach and Stockton/Beach would minimize conflicts between outbound garage traffic and the planned MUNI F-Line. Exclusive lanes on The Embarcadero northbound and Beach Street eastbound would also reduce conflicts. Compared to the other alternatives, the large off-street stacking area reduces potential vehicle/streetcar conflicts at the intersection of Beach Street with The Embarcadero.

"Access to Remote Parking. Under the preferred alternative operating plan, drivers could reach the remote parking at 80 Francisco three different ways after entering the queue for the garage: 1) by turning left from the main entrance queue onto Stockton Street, 2) turning left from Beach Street at Stockton Street, and 3) turning north on Powell Street, south on The Embarcadero and south on the extension of Stockton Street and passing

through the garage queue. All these movements would be routed through Stockton/Beach intersection, which would be signalized.

"Embarcadero Through Capacity. Adjacent to the main entrance of the garage, the preferred alternative calls for two northbound through lanes, a passenger loading lane, and the exclusive F-Line lane. This is the same capacity as currently exists for northbound Embarcadero traffic. If double parking were to occur at the project's loading area, impacts similar to those which now occur, i.e., temporary blockage of throughlanes would continue. The provision of more loading space in the project would be expected to reduce the occurence of double-parking.

"This garage access plan would substantially reduce the existing open space at Seawall Lot 312. This approximately 9,100 square foot area is described in The Northern Waterfront Findings Report as follows:

> 'This triangular open space, bounded by The Embarcadero Beach, and Stockton Streets, consists of a lawn area with a few wind-swept cedar trees. A concrete walkway through the area connects Beach Street to Pier 39 via a signalized crosswalk across The Embarcadero. The open space has no recreational value but serves as a pedestrian corridor that provides visual relief from the relentless architecture of the garage.'

"The unpaved area would be reduced to landscaped strips along The Embarcadero and Beach Street. At the eastern end of this triangular space this landscaped strip would be eight feet wide, broadening to over 50 feet at Stockton. On Beach Street this strip would be six feet wide, broadening to about 20 feet at Stockton. Landscaping in these areas would be designed to conform to standards developed as part of the on-going Fisherman's Wharf Improvement Program.

"The pedestrian route across this area would be moved to the west. The existing crosswalk and stoplight would be moved to serve this pedestrian route.

"In conjuction with an extension of Mason Street to The Embarcadero and recommended changes in access for the Pier 39 Garage, the Fisherman's Wharf Transportation Plan has proposed changing the directional flow of Powell Street to southbound only between Jefferson and North Point Streets. Underwater World project sponsors have committed to support this concept and would move the secondary entrance to the Pier 39 Garage onto Beach Street and would have all Pier 39 Garage egress traffic turn left on Powell Street

in conjunction with implementation of Powell Street for southbound travel only. If changing Powell Street to southbound operation is part of the recommended Fisherman's Wharf Transportation Plan, it will be evaluated in the EIR on that project.

Since the preparation of the Summary of Comments and Responses, additional work has been done by staff, the Citizens Advisory Committee, and the sponsor, on the proposed garage circulation scheme. The CAC developed an alternative garage circulation scheme in late June, and a revised CAC scheme was presented at a CAC meeting on July 5 and was presented to the Commission on July 6. An analysis of these two different approaches to improving garage circulation is added to the EIR as follows:

- "Original CAC Alternative

The Original CAC Alternative (shown in Figures 31E and 32B) differs from the Staff/Sponsor Preferred Alternative in the following ways:

"No south/eastbound traffic is provided on The Embarcadero between Powell and Beach Streets;

"Powell Street is two-way between Jefferson and Beach Streets;

"Left turns are allowed from westbound The Embarcadero to southbound Powell Street;

"The Embarcadero is one-way west/northbound from Beach to Powell Street;

"No garage access is permitted on Powell Street;

"A garage access point is provided on Beach Street just east of Powell;

"Off-peak access to the garage from The Embarcadero to the new Stockton access point would be provided east of the relocated crosswalk. The access would be closed between 11 AM and 6 PM for all weekend days and holidays;

"Both garage access points (on Beach and Stockton) allow both ins and outs; and

"The access for the new Stockton inbound garage stacking area has been relocated just west of the Beach/Embarcadero intersection.

The criteria used in reviewing circulation alternatives was studied for the CAC Alternative and is summarized below:

"Level of Service: Table 17 of the EIR (also shown in the Comments and Responses document on page C&R-159) has been amended to reflect future levels of service under the original CAC Alternative. The table reflects cumulative weekend PM peak hour conditions. Traffic conditions at Powell/Beach and Stockton/Beach are all worse with the original CAC Alternative than with any of the other alternatives studied. The primary traffic problems are caused by concentrations of traffic at the Beach/Powell intersection, since Beach provides the only eastbound lane from the waterfront area and concentration of all garage access onto Beach Street without any use of The Embarcadero for exiting traffic.

"Garage Access: Ingress to the Pier 39 garage would be focused on Beach Street; however, access from The Embarcadero is being added during non-peak hours. Vehicles could access the garage from three different points, but only one location would have adequate off-street stacking. The multiple ingress points would create confusion for drivers, resulting in on-street queueing during peak conditions if manual traffic control is not utilized. Egress from the garage would also be focused on Beach Street. During non-peak conditions, this would provide a direct route to The Embarcadero or other streets away from the Northern Waterfront. However, during peak conditions, Beach Street would become more congested, resulting in vehicle delays. Auto queues generated with these delays would be compounded due to the multiple parking access driveways on Beach Street with the proposed circulation changes. This queueing would not occur to the same extent with schemes which provide an additional egress route via The Embarcadero (as is provided today).

"On-Street Parking: As with all schemes, some on-street parking would be removed. There would be no on-street parking on Beach Street from Powell Street to The Embarcadero (nine spaces lost). Parking on Powell Street south of The Embarcadero could be added.

"Pedestrian Circulation/Safety: By allowing left turns from The Embarcadero onto Powell Street, conflicts between vehicles and pedestrians are significantly increased compared to other alternatives. This conflict exists today and could increase with the original CAC Alternative. An all-walk pedestrian phase has been assumed in analysis to reduce this impact. The original CAC access plan increases pedestrian exposure to conflicts with vehicles along Beach Street due to three new crossings of the sidewalk. However, the pedestrian flows along the north side of Beach Street are typically low, which limits the number of pedestrian/vehicle conflicts.

"Off-Street Garage Stacking: The off-street stacking area off Beach Street at the new Stockton access point provides more stacking area than any alternative except the Preferred Alternative presented in the Response to Comments document (pages C&R.154-162). The original CAC Alternative plans to stack cars on Beach Street for access to the secondary entrance off Beach Street, which would be on public streets.

"Traffic/F-Line Conflicts: The original CAC Alternative modifies the Preferred Alternative in that the exclusive F-Line lane has been moved to the west side of the existing bus/passenger loading area. Bus and truck traffic will cross the F-Line tracks as they access the expanded passenger loading zone. The project sponsor has agreed to provide traffic control personnel to minimize the possible conflict between passenger loading zone activities and the F-Line. Concentration of traffic on Beach

Street approaching The Embarcadero will increase potential conflicts between vehicles and the F-Line as the streetcar goes to mixed flow operation on The Embarcadero southbound between Beach and North Point Streets.

"Access to Remote Parking: The original CAC Alternative relies on Beach Street as a key route to redirect traffic to remote parking areas. The secondary route for directing traffic to remote parking would be North Point Street. This differs from the Preferred Alternative which utilized North Point and Bay Streets via Powell and Stockton Streets.

"Embarcadero Through Lane Capacity: Through lane capacity on The Embarcadero would be similar to all alternatives and comparable to current conditions, with two through lanes. By allowing left turns from The Embarcadero onto Powell Street, some queueing would occur due to pedestrian conflicts. This would be similar to the conflict which presently occurs at Mason Street. The third lane on The Embarcadero would be used for queueing of left turning vehicles, similar to the current configuration. The greatest change in through capacity for The Embarcadero is the removal of southbound traffic which is served today by one lane.

"Internal Garage Circulation: The original CAC Alternative substantially modifies internal garage access. Presently, exiting vehicles proceed straight down the internal garage ramp to a wide internal stacking area exiting on Powell Street. The original CAC Alternative would require all traffic to turn left at the bottom of the internal ramp toward Beach Street, where a new stacking area would need to be developed. Additionally, any traffic exiting to the new Stockton Street access must cross this stacking area, resulting in internal conflicts and potential queueing in the garage. This is less desirable internal circulation than the alternatives with a Powell Street exit. Once at the Stockton Street exit, there is little space for stacking between the garage exit and Powell Street, only allowing about four vehicles to discharge at a time with the proposed signal at Stockton/Beach.

"Revised CAC Alternative

The Revised CAC Alternative is similar to the original CAC Alternative described above with the following changes (see Figures 31 F and 32C):

"Primary exit is located on The Embarcadero east of Powell Street;

"The Embarcadero is two-way from the proposed exit to Beach Street;

"Garage access on Beach Street is only a secondary entrance;

"The off-peak ingress to the garage from The Embarcadero would be at the new primary exit point.

"Level of Service: Traffic conditions for this alternative are summarized in Table 17. Traffic operation with the Revised CAC Alternative is better or the same as the original CAC alternative at every intersection except one. Levels of service would be comparable to the original five alternatives studied. Only the intersection of Beach/Embarcadero would not operate better with the Revised CAC Alternative

compared to the original CAC Alternative. This change is due to allowing Pier 39 traffic to exit onto The Embarcadero southbound. The concentration of Pier 39 garage traffic on Beach Street would be reduced with the Revised CAC Alternative.

"Garage Access: Ingress to the garage would be similar to the original CAC Alternative, except The Embarcadero "slow day" access would be moved northward to the proposed primary exit. Egress would be focused on The Embarcadero southbound, as it is today. Additionally, a secondary exit point would be provided at the proposed Stockton Street entrance. Access would be very visible to drivers, simple to understand and the exit condition would be relatively unchanged compared to today.

"On-Street Parking: On-street parking would be similar to the original CAC Alternative in that all on-street parking along Beach Street from The Embarcadero to Powell Street would be removed. Parking on Powell Street from Beach Street to The Embarcadero could be added.

"Pedestrian Circulation/Safety: The provision of left turns from The Embarcadero onto Powell Street conflicts with pedestrian flows, as in the original CAC Alternative. However, the Revised CAC Alternative reduces pedestrian/auto conflicts on Beach Street by eliminating the primary exit onto Beach Street and reducing the size of the Beach Street garage access point to one lane. The proposed primary garage exit onto The Embarcadero crosses a sidewalk which carries low volumes of pedestrian traffic, limiting the number of potential pedestrian/vehicle conflicts, and eliminates existing conflicts between pedestrians and Pier 39 garage egress traffic at The Embarcadero/Powell/Jefferson intersection.

"Off-Street Garage Stacking: The Revised CAC Alternative is similar to the original CAC Alternative, which provides a substantial increase in stacking area compared to other alternatives and compared to existing conditions.

"Traffic/F-Line Conflicts: The Revised CAC Alternative is similar to the original CAC Alternative; however, the conflicts of added egress traffic from Beach to The Embarcadero are reduced significantly with the proposed Pier 39 garage exit onto The Embarcadero.

"Access to Remote Parking: Remote parking access would be the same as the original CAC Alternative.

"Embarcadero Through Lane Capacity: This would effectively be the same as the original CAC Alternative, which is comparable to all other alternatives and similar to current conditions. The southbound capacity on The Embarcadero would be retained with one lane.

"Internal Garage Circulation: Internal garage circulation is substantially improved over the original CAC Alternative. Major conflicts of internal traffic have been removed with entering traffic separated from exiting traffic. A new internal stacking area would need to be developed for The Embarcadero exit. The problems of stacking at the Stockton/Beach exit signal would be minimized, since this would be a minor or secondary exit point. Exiting traffic circulation is only slightly less desirable than with a Powell Street exit which does not require any turn movements at the foot of the internal ramp.

- "Before the issuance of occupancy permits for the project, the project sponsor would submit a report to the Department of City Planning showing that the required alterations have been carried out."

- Because this mitigation could improve traffic operation at the Embarcadero/Powell/Jefferson intersection, the following is added to the end of page 151:

  "The project sponsor has agreed to a mitigation measure, improving access to the Pier 39 garage which could avoid this significant effect."

COMMENT

"Operations of the entire parking system should be described. The following activities which are described as parking mitigation will all require staff and some sort of centralized organization:

-- Valet parking in existing garage;
-- Determining that existing garage is full;
-- Waiving off traffic;
-- Handing out maps to 80 Francisco Garage;
-- Placing signs with directions to 80 Francisco Garage; and
-- Operating 80 Francisco Garage." (Peter Martin)

"Placing sandwich board signs in the street and utilizing traffic monitors to direct motorists two days out of the week to a garage several blocks away in a residential area is a Mickey Mouse approach." (Christopher Martin - Hearing)

"Could anyone really believe that the use of sandwich boards along the Embarcadero to direct cars to another garage would be an effective (to say nothing of attractive) solution?" (Mary Lolli)

"The use of portable signs along The Embarcadero or other streets would probably not be permitted. The use of civilian traffic/parking control personnel would have no enforcement capability. It is doubtful that the S.F. Police Department could provide this service." (Norman Bray)

"Parking mitigations are proposed to put sandwich board signs out on The Embarcadero and add 'personnel' to direct visitors to parking. Firstly, the Port does not allow sandwich board signs. Secondly, it seems such personnel would be used to direct people to the 80 Francisco St. garage (see p. 136) regardless of whether they are trying to get to the aquarium or not. Directing visitors to the acknowledged vacant slots in other (i.e., central and west Wharf area) parking lots/garages would help to alleviate the parking problem." (Richard Weiderhorn)

RESPONSE

The method of operating a parking garage, mentioned as a mitigation measure in the EIR, is common and proven throughout the Bay Area. In fact, the allowing of vehicles to queue on a public street is more of an exception than closing a garage when it is full. Valet operation and waving off drivers to the 80 Francisco garage are described above. Approaches termed "Mickey Mouse" by the commentor (such as using uniformed civilians to direct drivers to available parking) work quite well in Oakland's Jack London Waterfront. Based on this experience, a uniformed employee could be effective at the Pier 39 garage. The key difference for the project would be that drivers would be turned away from their destination. Several things could be done to "educate" visitors before they reach Pier 39:

- Maps showing the route to 80 Francisco Street should either be on the back of or accompanying advance tickets or as an attachment. This is particularly important for weekends and holidays. When advance tickets are purchased for weekend/holidays, it should be possible to advance-purchase a parking pass to the 80 Francisco garage.

- The City could elect to install signs early on Embarcadero (south of North Point Street) and/or Sansome Street (south of Chestnut Street) directing drivers to 80 Francisco, similar to the signs recently installed along Embarcadero closer to Pier 39. These would not be sandwich signs which the Port prohibits, but could be permanent signs clearly indicating that the parking was available for weekends only.

- Attach a movable gate which would block the entrance to make it clear that the garage is full.

The employee at the entrance to the garage would need to be in contact with the valet parking operators in the garage to keep abreast of spaces opening in the garage. The attendant could direct vehicles to all available parking in the area.

80 Francisco Street Parking

COMMENT

"The 80 Francisco Garage should be shown on a figure. Note that street patterns shown in DEIR Figures 29 and 30 are incorrect with respect to Francisco." (Peter Martin)

RESPONSE

New graphics are provided. See Figures C&R 19, C&R 20, and C&R 21.

COMMENT

"According to Page III-20 of the Traffic Study, it was assumed that vehicles which parked in the 80 Francisco Garage would first pass the Pier 39 Garage, then continue to 80 Francisco. What route was assumed between Pier 39 and 80 Francisco Garages?

"Was any consideration given to the fact that people who had to park in the 80 Francisco Garage might not proceed directly from the Pier 39 Garage to the 80 Francisco Garage, but might circle back to Pier 39, and drop off their passengers before proceeding to the 80 Francisco Garage?" (Peter Martin)

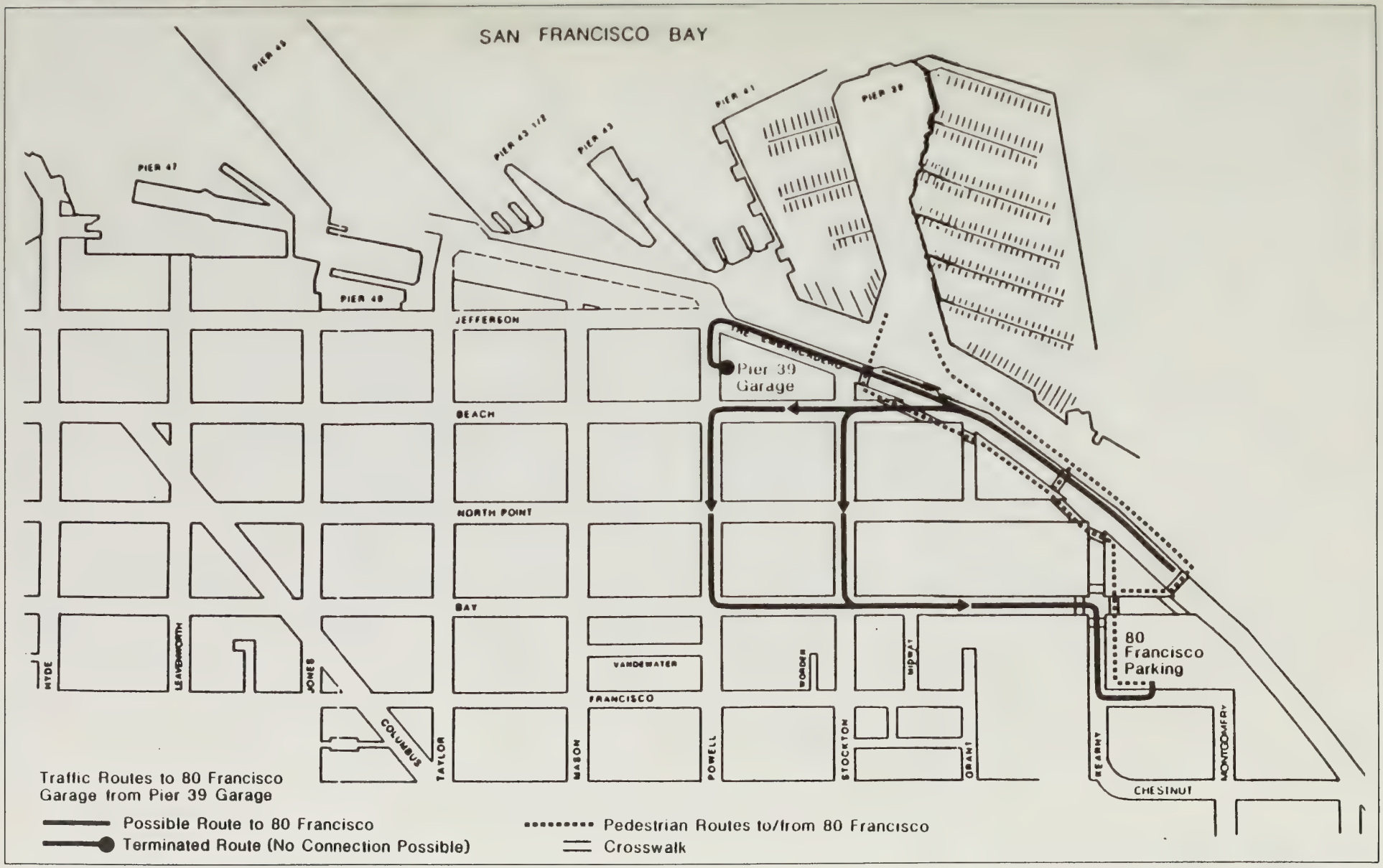
"Tell us how you get from being waved off at Pier 39 and trying to cut across traffic lanes and whatever and get to the 80 Francisco garage." (Sue Hestor - Hearing)

"80 Francisco is pretty far away. You are taking the Fisherman's Wharf parking problem and moving it to Telegraph Hill. This needs a much better discussion. Also how are people going to get there after they are 'waved away' from Pier 39? Why will they not search for on-street parking on the way?" (Sue Hestor)

"The introduction of temporary sandwich boards will also have a visually negative impact on an area that is already cluttered with a disparate array of signs. Motorists who proceed into the area and find the Pier 39 garage already full will then become part of the recirculation traffic within the area as they are directed out again toward the Francisco garage. The DEIR should identify the route that motorists would travel and then evaluate the impact of that increased traffic on intersections along that route." (M.K. Veloz)

EXISTING GARAGE CIRCULATION

FIGURE C&R 19



SOURCE: DKS ASSOCIATES

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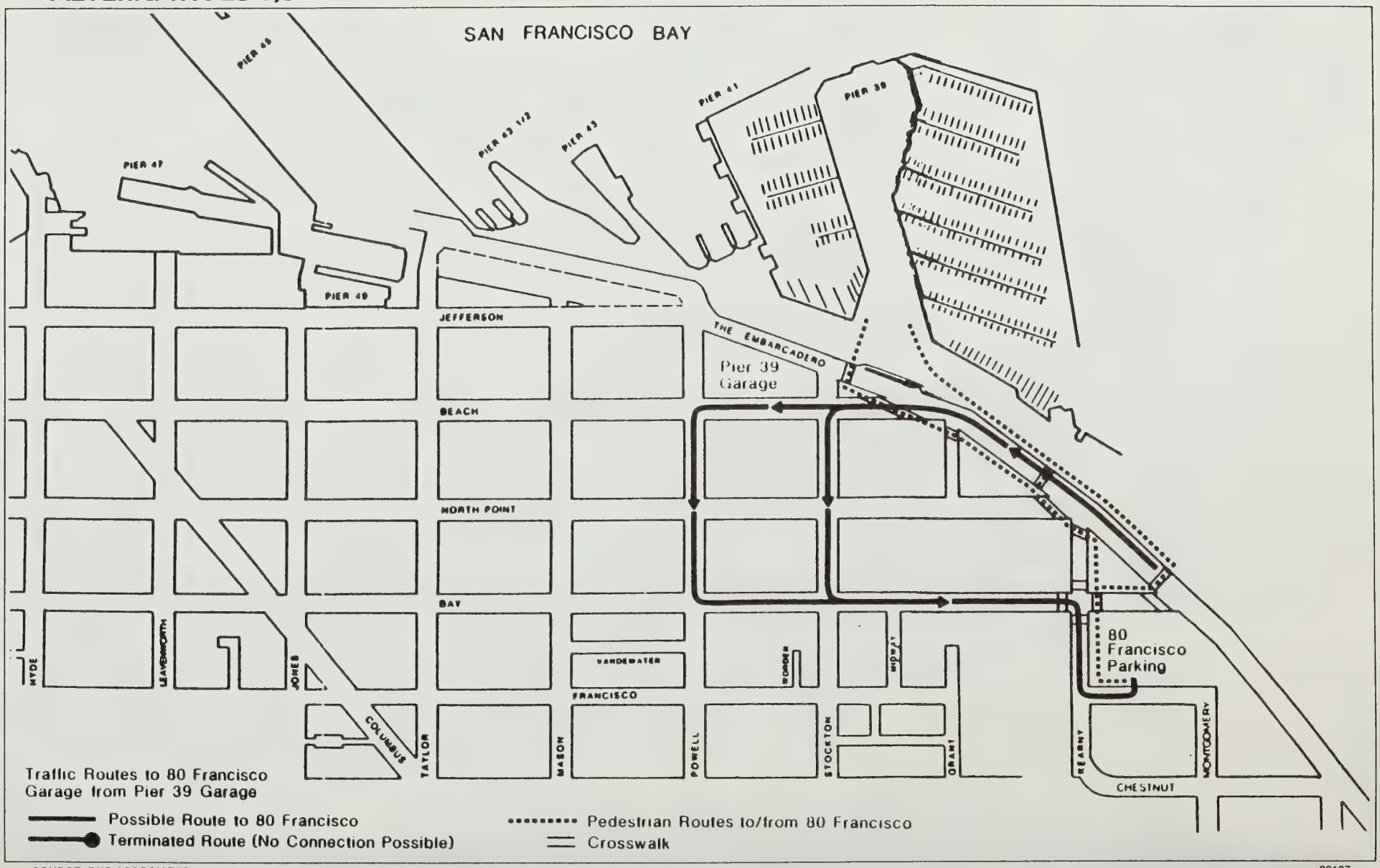
PIER 39 GARAGE EXTERNAL CIRCULATION ALTERNATIVES 1,3 AND 4

FIGURE C&R 20



SOURCE: DKS ASSOCIATES

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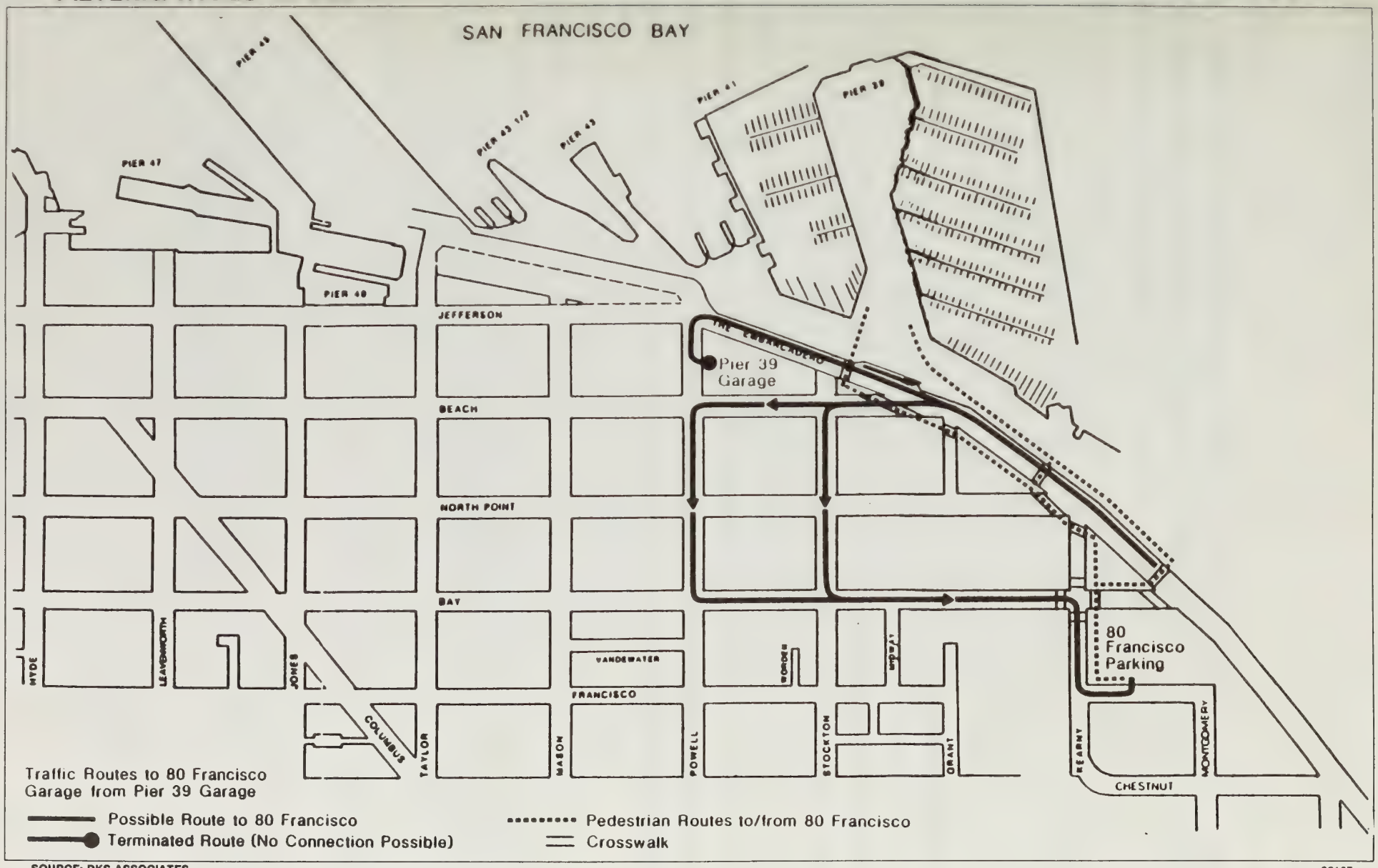
PIER 39 GARAGE EXTERNAL CIRCULATION ALTERNATIVES 2 AND 5

FIGURE C&R 21



SOURCE: DKS ASSOCIATES

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RESPONSE

Under the preferred alternative operating plan, drivers could reach the remote parking at 80 Francisco three different ways after entering the queue for the garage: 1) turning left from the main entrance queue onto Stockton Street; 2) turning left from Beach Street onto Stockton Street, during periods when the gates allowing entrance to the main queuing area close; and 3) circling around the garage on The Embarcadero to the extension of Stockton Street and passing through the garage queue. All these movements would be routed through Stockton/Beach intersection, which would be signalized to provide right-of-way for traffic bound for the 80 Francisco garage. The preferred alternative would thus provide three routes to the additional parking at 80 Francisco.

For the remaining garage circulation schemes evaluated in the EIR, users of the additional parking at the 80 Francisco garage were assumed to first drive to the Pier 39 garage. The route to additional parking at the 80 Francisco Garage would largely depend on the configuration of a second access point at the Pier 39 garage. Figures C&R 19, 20 and 21 show the assumed routing for traffic passing from the Pier 39 garage to the 80 Francisco garage for existing conditions without a second Pier 39 garage access, and for each of the Pier 39 garage second access schemes evaluated in the EIR.

As shown in the figures, access to the additional parking at the 80 Francisco garage would be impaired under existing circulation and Alternatives 2 and 5, for drivers using the primary access via The Embarcadero and Powell Street. These drivers would not be able to exit the garage queue after turning onto Powell Street. Under Alternatives 1, 3, and 4, drivers would be able to turn left from Beach Street onto Stockton or Powell Streets to reach 80 Francisco parking. Under Alternatives 1 and 4, the queue of cars waiting to enter the garage could potentially extend into The Embarcadero/North Point/Kearny intersection.

It is unlikely that the number of drivers electing to double back and drop off passengers at Pier 39 before driving to the 80 Francisco garage would be measurable above daily variations in traffic flow in the project vicinity. The potential of the double-backing affecting traffic is compensated for in the assumption that all traffic heading to the 80 Francisco Garage would pass by the Pier 39 garage. In reality, some traffic would go straight to the 80 Francisco site.

COMMENT

"What are the impacts of using the 80 Francisco Garage to provide additional parking on weekends? For example, the garage has only one entry lane and exit lane. Was the garage operation analyzed?" (Peter Martin)

"Are there sufficient entrances and exits to prevent the type of queuing the [sic] currently occurs at the Pier 39 garage?" (M.K. Veloz)

RESPONSE

The existing 80 Francisco garage is adequately designed to serve its current number of spaces. The garage has been used for the past 10 to 15 years during weekdays by office workers. Office parking has much sharper peaking characteristics than recreational parking. This is due to employees arriving to work in only a one to two hour period. The peak rate of flow through the 80 Francisco entry and exit lanes would be expected to be significantly higher during the week when used for office parking than on weekends when used by visitors to the Wharf. The reason for the queuing which occurs at the Pier 39 garage is <u>not</u> the processing capacity of the entrance and exit, but the availability of spaces. During periods of the day when there are spaces available in the Pier 39 garage, there is no queue on The Embarcadero of drivers waiting to enter.

COMMENT

"The project sponsor also proposes to utilize 400 parking spaces in the 80 Francisco parking garage on weekends. This mitigation measure would result in impacts on the surrounding neighborhood. If queuing occurs, will traffic on Francisco and Kearny become gridlocked?" (M.K. Veloz)

"Would the 80 Francisco Garage attract other wharf visitors, and thus, be unavailable for Aquarium generated traffic?

"Would provision of parking spaces at the 80 Francisco Garage encourage more people to drive to The Fisherman's Wharf Area?" (Peter Martin)

RESPONSE

Providing public weekend parking at the 80 Francisco garage would complement the City's current efforts to divert vehicles away from the Pier 39 area to other less heavily-used parking facilities. By reducing the number of vehicles circulating throughout the Wharf area seeking parking, 80 Francisco could help improve conditions in the heart of the Wharf where weekend congestion is at its worst. The traffic impacts at the Kearny/Francisco intersection are documented in the EIR. The impacts would be slight: the level of service would not change, and the total peak hour volume through the intersection would remain less than it is today during the weekday PM peak hour. The parking at 80 Francisco would not serve aquarium patrons exclusively, but would be available to all visitors to the Wharf. Adding 400 spaces to the Wharf area's total weekend parking supply would not be likely to significantly alter people's decision to go to the Wharf or their means of travel. All additional vehicle travel has been studied within the traffic impacts section of the EIR.

COMMENT

"What would the impact of 80 Francisco Garage traffic have on the intersection of Kearny and Francisco?

"What will the impacts of 80 Francisco Garage traffic be on the existing residential uses near the garage?" (Peter Martin)

RESPONSE

As shown in Table 9, page III-23 of the background traffic study, the unsignalized intersection of Kearny/Francisco currently operates at level of service A and would remain at level A with the additional traffic generated by the project. Project traffic would not noticeably affect access to the residential uses in the vicinity of Kearny/Francisco. The placement of a stop sign to control the westbound Francisco Street approach is recommended to ensure adequate traffic control near the intersection. Currently the intersection is uncontrolled, although drivers were observed to stop as if there were a stop sign for westbound traffic.

COMMENT

"The alternative parking at 80 Francisco is not a desirable location from the standpoint of the neighbors living in that immediate area. The 80 Francisco facility is located outside the geographic area defined as Fisherman's Wharf." (Peter Brown)

"Increasing the capacity of the Pier 39 garage is probably desirable, although encouraging parking somewhat more remote, e.g. 80 Francisco, can reduce the congestion in the Fisherman's Wharf area. Use of this garage, and possibly the one across Francisco Street has some problems. Access from The Embarcadero is not obvious, and Kearny Street is narrow. There is housing (Wharf Plaza) for elderly and handicapped persons on the west side of Kearny. They might object to additional weekend traffic in their neighborhood." (Norman Bray)

RESPONSE

The 80 Francisco Street garage is located across Kearny Street from Wharf Plaza, and the concerns of these residents should be taken into account. However, the adjacent land uses on three sides of 80 Francisco Street are primarily office, commercial and parking rather than residential. The traffic volumes during the weekday peak hour through the Kearny/Francisco intersection are 50% higher than on weekends. Even with project traffic using 80 Francisco on weekends at peak times, traffic would be less than peak conditions on weekdays today.

COMMENT

"The 80 Francisco Garage is 1,500 feet from the project and cannot be seen from it. How will these factors influence the 80 Francisco Garage's ability to attract patrons from the project?" (Peter Martin)

RESPONSE

Signing would be used to direct visitors to the additional parking at 80 Francisco. Admission tickets could also direct patrons to the 80 Francisco garage.

COMMENT

"How would the Pier 39 Garage be judged full for purposes of the wave-off parking plan? In a garage as large as the Pier 39 Garage it is likely that there will be some

vehicles leaving all the time. Thus, it is also likely that vehicles will queue to wait for the garage rather than drive to the 80 Francisco Garage regardless of the fact that it might be faster to use the 80 Francisco Garage." (Peter Martin)

"How will they notify the public that the lot is full? How will they notify the public while people are waiting in line that 80 -- on weekends only, by the way -- that 80 Francisco Street garage is available. While they're in line? How will they notify them how to get there?" (Nunzio Alioto - Hearing)

"...concerned about the effectiveness of the policy of waving off parkers at the Pier 39 garage. This can work, but we'd like to see an awful lot more information about the specifics of how it would work. We would like to know how the second garage access would work and also about the valet parking type." (Peter Martin - Hearing)

"How is he going to wave people off? By what route will he get them to the 80 Francisco alternative site? What impact will there be on the route directed? At what point does Pier 39 make the determination for someone coming into the Wharf, as to what their destination is within the Wharf area or do we just assume everyone is going to Pier 39?" (Peter Brown)

RESPONSE

Employees handling the valet parking operations would be in contact with the employee(s) monitoring the entrance(s). The non-valet floors would need to be monitored periodically as well. Walkie-talkies or intercoms are commonly used for such operations. The employee at the entrance would be informed of open spaces, and could open the garage periodically, e.g. every half hour, to admit enough vehicles to fill the available spaces. Until this set time period passes, drivers would be waved on to the 80 Francisco garage or other parking in the area. The employee at the gate could distribute simple maps indicating the location of and direction to 80 Francisco. A moveable gate could be used to block the entrance to further encourage drivers to continue on to 80 Francisco. Routes to the 80 Francisco garage are shown in Figures C&R 19, 20 and 21.

Other Mitigation Measures

COMMENT

"On Page 135, even though time-specific tickets are required as a mitigation measure, visitors would likely come and visit other Pier 39 attractions while waiting, thus causing traffic congestion." (Commissioner Bierman)

RESPONSE

Many patrons would arrive earlier than their admission time. The traffic analysis incorporates a 50% early arrival factor for the weekend peak hour; that is, the transportation analysis is based on 2,720 peak hour person trips, when the actual capacity of the aquarium could handle at the most 1,800 peak hour person trips. The weekday peak hour maximum attendance of 2,350 used in the analysis is about 30% greater than the maximum hourly capacity.

COMMENT

"The report indicates that admission controls would be required, but does not indicate how they would operate. The logistics of issuing 12,600 tickets in 30 minute intervals on a daily basis would appear to be unrealistic. Since one of the stated objectives of the project is 'to achieve a reasonable return from the financial investment' (p. 10), one would expect that the operator would attempt to operate at full capacity (i.e., 12,600 visitors per day). However, it would probably be difficult to attract 900 visitors per hour after 9 PM. Therefore, there would be pressure to exceed 900 visitors per hour during peak hours resulting in undesirable transportation impacts." (M.K. Veloz)

"A time specific admission program must be well publicized if it is to reduce transportation impacts. Will unknowing patrons make two trips to the wharf, one to buy tickets and one to visit the aquarium? Tickets must be readily available to many sites (e.g. Ticketron, BASS tickets) to assure that patrons can easily obtain them.

"The fact that a service charge is generally collected by offsite ticket brokers is important. Will this cause potential patrons to drive to the Aquarium to purchase tickets in advance with no service fee?

"Other time specific operations (Monterey Bay Aquarium, Alcatraz tours) are relatively expensive and several hours are spent on visits. With these types of attractions, advance ticketing is accepted. Would the proposed aquarium be the caliber of attraction which will allow advance ticketing to work? Some examples of similar programs should be provided." (Peter Martin)

"Time-specific admission as a means to control the arrival and departure of motorists is described as if it is a proven and systematic approach, when in fact its effectiveness is purely conjectural." (Christopher Martin - Hearing)

RESPONSE

As with the Monterey Bay Aquarium and the Red & White Fleet's Alcatraz tours, timed admission tickets could be sold at ticket outlets such as BASS and Ticketron. This system has proven its effectiveness in operation over several years. The majority of tickets for the Alcatraz tours are sold at ticket agencies. The location and availability of tickets would be widely publicized prior to the project's opening. There would of course be trips made to Pier 39 to purchase tickets at the door. These trips might be made out of a desire to save the service charge imposed by ticket agencies, based on not knowing about timed admission policies, or simply due to geographic convenience. There would also be trips made earlier than the admission time. Such trips were accounted for in the analysis by assuming a peak hour trip generation 50% greater than the maximum hourly capacity of the aquarium.

COMMENT

"One of the problems in the mitigation measures with that increased traffic is mentioned the one-way couplet of Bay and North Point Streets. The citizens advisory committee, after much discussion and soul searching, has come to an agreement to unanimously disapprove that concept. It doesn't mention that in the EIR. The couplet does not accomplish what lots of people think it might." (Stewart Morton - Hearing)

"We have opposed the elevation of traffic speeds through the northeast waterfront and the Fisherman's Wharf area or the redesign of streets to accommodate such

speeds, and that if it is necessary to accommodate the traffic load that this increase suggests by measures that would increase those speeds, the hazards, the traffic noise and all the other aspects of that speed, we would be opposed to that." (Rod Freebairn-Smith -Hearing)

". . .the one-way couplet that is proposed as a mitigation measure has been opposed by the merchant groups as well as the residential groups of the area." (Christopher Martin - Hearing)

"It's been talked about the one-way couplet being opposed, so I think that is not a feasible mitigation." (Commissioner Bierman - Hearing)

"The concept of a one-way couplet system using Bay and North Point Streets to reduce traffic conflicts has already been reviewed by the Fisherman's Wharf Citizens Advisory Committee, the Department of City Planning, and the Department of Public Works. They have determined that by proposing a one-way couplet system on Bay and North Point Streets, is to commit the city to CIVIL WAR. The neighborhoods do not want a one-way couplet and the Fisherman's Wharf area has agreed to support their request." (Peter Brown)

"Advocating a one way couplet on Bay and North Point to alleviate traffic circulation problems will raise the ire of neighborhood groups." (M.K. Veloz)

"The Bay-Northpoint one-way cuplet [sic] is still being mentioned despite the fact that the neighborhood residents are vehemently opposed to this idea." (Mary Lolli)

"A one-way couplet on Bay and North Point Streets would increase traffic, especially on North Point, and is opposed by neighborhood groups. By increasing traffic volumes, this project could negatively impact pedestrian safety and the area's environment." (Peter Martin)

"The Planning Commission, the Department of City Planning and/or the Department of Public Works do not have the authority to implement one-way operation on Bay or North Point Streets. This public policy decision would be made by the Board of

Supervisors and the Mayor through the legislative process. The Department of Public Works continues to believe that one-way operaion [sic] would be the most beneficial and benign step that can be made to improve access to Fisherman's Wharf for tourists and for local residents and will use it as the standard of comparison when evaluating other access-improvement proposals that may be presented." (Norman Bray)

RESPONSE

The one-way couplet is opposed by residents at this time. However, a mitigation as effective in improving capacity, traffic operations, safety, access and circulation has yet to be evaluated and proven. As noted in the City Traffic Engineer's comment, the Department of Public Works uses the couplet as the standard of comparison when evaluating other proposals for access improvements. The final decision on this measure rests with the Board of Supervisors and the Mayor.

Page 146, the following is added after the fourth full paragraph under "Area-wide Mitigation Measures":

"The one-way couplet is opposed by residents at this time. However, a mitigation as effective in improving capacity, traffic operations, safety, access and circulation has yet to be evaluated. The Department of Public Works uses the couplet as the standard of comparison when evaluating other proposals for access improvements. The final decision on this measure rests with the Board of Supervisors and the Mayor."

An evaluation of the pros and cons, from a transportation perspective, of the one-way couplet is provided in the Northern Waterfront Traffic and Transportation Study, pages 72 to 75, and summarized on page 146 of the EIR. This EIR must examine mitigation measures which could reduce the significant impacts of this project when considered in conjunction with other reasonably foreseeable projects. This EIR does not commit the City to implementing any mitigation measure. That remains within the discretion of the decision-makers.

COMMENT

"Is there any basis for restriping the parking garage for more compact cars? Do most <u>visitors</u> drive compact cars? How wide will the new spaces be?" (Peter Martin)

"Page 136, Mitigation Measures - The Pier 39 Garage proposes to increase capacity through restriping and valet parking. The garage has already been restriped and they are currently utilizing valet parking." (Peter Brown)

"The draft EIR speaks to the re-striping of the Pier 39 parking facility to increase the number of available parking spaces. The draft EIR fails to address the fact that the Pier 39 parking structure was previously restriped (with the exception of a section on the upper floor of the garage) to a degree that drivers and passengers of full-size automobiles, trucks, and vans are hard-pressed to enter and exit their vehicles. The only remaining area in the Pier 39 parking garage where full-size vehicles can find adequate parking room is on the top floor with its few available standard-sized parking spaces. Any further re-striping or "reconfiguration" (as expressed in the draft EIR) would only serve to further diminish the safety and comfort of garage users. The draft EIR does not adequately address the practicality of the sponsor's plan to gain further parking spaces in the Pier 39 garage." (Robert Pickard)

"This is grossly understated in the EIR. The parking problem is extreme. Two block lines of vehicles waiting to get into the Garage are common. The spaces have already been re-striped to the point where it is almost impossible to get out of your car once you find a space because there is not enough room to open the doors." (Roy Mollard)

RESPONSE

The Pier 39 garage today has slightly over 50% compact stalls, while based on repeated site observations, a large majority of garage users drive compact cars. This accounts for recent restriping. The potential to gain 18 spaces through restriping assumed the maximum possible restriping to compact spaces 7' 6" wide. The 7' 6" spaces are within the City guidelines for parking space design of compact spaces. Restriping to compact stalls would not affect driver "safety," although perceived driver "comfort" could be reduced due to less space between stalls. With the conversion to maximum compact parking, 90% of the stalls would be compact and 10% of the spaces in the garage would remain full-size spaces. The 10% standard stalls would remain as not all spaces could be restriped due to stall layout and column location.

The reconfiguration of existing stalls refers to the northwest corner of the garage on floors two through five, where it would be possible to increase the number of useable stalls by replacing low use circulation area with parking (see Figure C&R 22).

COMMENT

"How will the new valet parking in Pier 39 work? Where will it be located? Will it interfere with existing self-park spaces? More details of the valet parking plan should be provided." (Peter Martin)

"Also, it talks in here about using some of the regular spaces for valet spaces. I am presuming valet costs more, although I don't really know about the prices. So, would you go into it a little bit about what valet parking costs versus what these regular spaces go for." (Commissioner Biermann - Hearing)

"DKS Associates' 1987 traffic and transportation study indicated that, even on weekdays, the Pier 39 garage fills during peak hours. Adding 40 parking spaces to a facility that can not accommodate current peak weekday demand will do little to alleviate additional parking needs generated by the aquarium. The project sponsor apparently recognizes the inadequacy of the additional spaces and is contemplating increasing valet operations in the garage (p. 98). Internal garage operations need to be analyzed in greater detail in order to evaluate the impact of increased valet parking on the ability of cars to enter and exit the garage without causing long queues on surrounding streets." (M.K. Veloz)

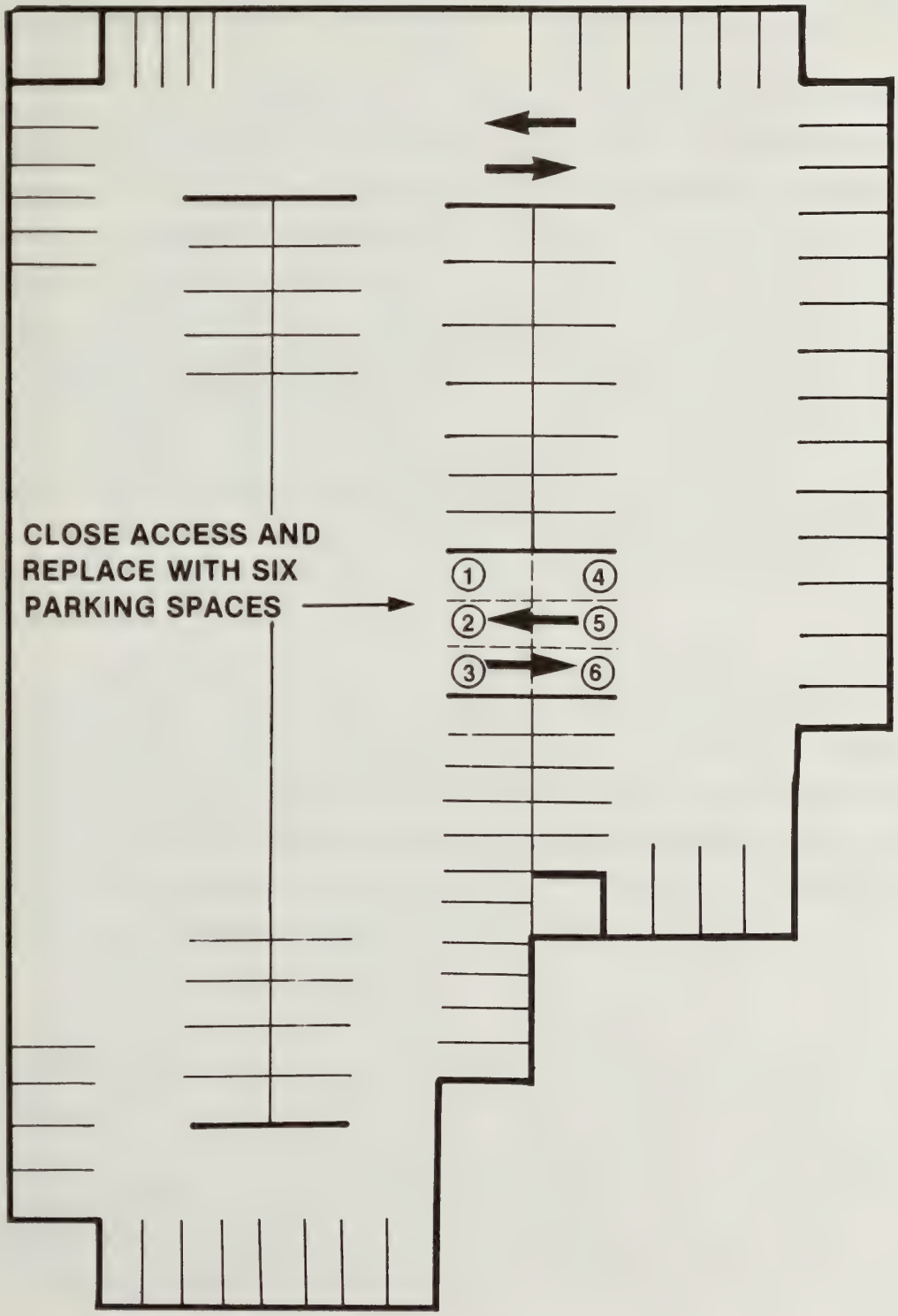
"...nor does it address the manner in which the sponsors would permanently guarantee, for the life of the lease, the provision of 'additional parking spaces' gained through the use of 'valet' parking." (Robert Pickard)

"How would the valet parking plan on lower floors on the garage work? This is a particular problem since the garage makes use of ramp parking and vehicles entering and leaving the garage must use the parking area to get in and out. Valet operations would be difficult in such a situation.

"How many valet personnel are currently used on the top floor valet operation?" (Peter Martin)

PIER 39 GARAGE POTENTIAL RECONFIGURATION

FIGURE C&R 22



SOURCE: DKS ASSOCIATES

NO SCALE

86137

". . .given the existing conestion [sic] in the Pier 39 garage, it can take longer to get out than in. It is questionable whether adding more valet operations on each floor would resolve the parking and traffic congestion." (Richard Weiderhorn)

"In several places throughout the DEIR (e.g., pages 5, 17, and 136) reference is made to the project sponsor's willingness to increase the capacity of the Pier 39 garage to accommodate additional demand for parking generated by the proposed project. However, the amount of the potential increase in capacity is understated. The capacity can be easily increased by 190-200 spaces with valet parking and other changes and even by as many as 290 spaces. The DEIR does not show the total potential increase in valet spaces which was tested on eight days during this past summer and proven effective for increasing the capacity of the garage by 150-170 vehicles on two floors. This is not now required but has been tried and can be effective. With use of valet parking on all floors, capacity can be increased by 270-290 spaces." (John Sanger)

RESPONSE

The project sponsor has used valet parking on the top and bottom floors of the Pier 39 garage during peak summer weekends to gain an additional 80 to 120 spaces.[24] This has operated without significant impact to surrounding or internal traffic conditions. For valet operations, cars are parked along the circulation aisles perpendicular to the marked stalls. The valet parking operation in the garage requires an additional seven to nine garage personnel.[25] Valet parking on all floors was tested once in August 1988,[26] but was found to have an unacceptable effect on normal garage operations.[27] Valet operations on all floors would require approximately 20 additional parking assistants, based on the seven to nine additional staff needed under the peak weekend valet operation used presently. Processing time would not be significantly impaired, as the rate of cars leaving the garage during the mid-afternoon with valet parking on all floors was no lower than other summer Saturdays. However, the supply increase provided by valet parking on all floors is not economically viable for the project sponsor in view of increased labor costs and interior congestion. Regular use of valet parking on an as-needed basis to help meet the project's demand could provide 80 to 120 spaces beyond the 937 striped spaces currently in the garage.

The project sponsor could increase the use of valet parking to help meet the project's weekday parking demand, and to accommodate the increased areawide weekend demand generated by the project. Such valet operations would continue as long as demand warranted, which, since limited valet operations are used currently on summer weekends, would presumably be over the life of the project on summer weekends. There would be no difference in parking fees between valet and self-park. By using a more efficient valet parking operation (two aisles of valet parking on the top floor and three aisles on the bottom floor), the capacity of the garage could be increased by an additional 60 to 80 spaces beyond the 80 to 120 spaces added today through valet parking. This would increase the total capacity of the garage to approximately 1,140 spaces with valet parking. Increased use of valet parking would increase operating costs, as additional personnel would be needed.

Operations at the Pier 39 garage today are constrained by the speed at which outgoing vehicles can be processed. Valet parking would produce the greatest benefit in combination with a second garage access point, which would greatly increase the processing speed.

COMMENT

"During the summer of 1988, changes have been instituted to improve signage and parking access routes to alleviate this problem. How would use of the 80 Francisco garage affect the recent changes? Temporary signage, perhaps in contradiction to the newly installed permanent signage, will have to be employed each weekend to direct incoming motorists to the Francisco Street facility." (M.K. Veloz)

RESPONSE

The intent of the City's recent signing changes is to redirect drivers to parking areas currently underutilized before they reach the most congested areas of the Wharf. Directing project visitors to 80 Francisco would meet this objective. Any signage would need to meet with current guidelines for the overall area. It would be possible to install permanent signs indicating that the 80 Francisco Garage parking is for weekends only, although temporary signs would cause less confusion for motorists.

COMMENT

"The draft EIR fails to address the impact of additional weekend and holiday traffic congestion and parking problems on the Marina slip owners . . . The draft EIR should address this issue and reflect the manner in which the sponsors would specifically guarantee and provide adequate, life-of-lease, close-in parking for the owners and tenants of the Marina at favorable rates, to ease the impact of increased congestion and limitation of parking." (Robert Pickard)

RESPONSE

Parking and traffic impacts and mitigation measures are discussed in the EIR. Traffic impacts were studied for peak weekday and peak weekend conditions and provide an assessment of future impacts on these scenarios. Any special arrangements for marina parking could be developed as conditions of approval through the Planning Commission as part of the project approval process, or could result from private arrangements between the marina users and Pier 39 management.

COMMENT

"Since admission to the project would be by time-specific tickets, this concept could be enlarged to provide site-specific parking. It is assumed that admission tickets would be vended by Ticketron, BASS, or comparable outlets. As a minimum, these tickets would be accompanied by a map directing to the 80 Francisco garage. As an option, a ticket purchaser could be offered the option of buying a parking space at the same time. A more restrictive, but more effective means would require pre-purchase of an 80 Francisco space for admission tickets for Saturday, Sunday or holiday admission dates during the peak tourist season." (Norman Bray)

RESPONSE

The comment is noted. The measures in the comment would all be useful inclusions for time-specific ticketing. If pre-purchase of a parking space at 80 Francisco is allowed or required, it may also be useful to provide comparative parking cost information. New visitors to San Francisco might choose not to purchase advance parking unless they realized that the cost of parking at other garages or lots in the area would be comparable.

COMMENT

"Pier 39 should subsidize transit fares to patrons of its stores, restaurants, and the project. A similar system, in place at museums in Golden Gate Park and in other cities works very well.

"The entire Northern Waterfront Area should be made safer for pedestrians. Strong consideration should be given to a transit-service-vehicle-pedestrian mall, especially on Jefferson Street.

"Increased publicity should be provided for transit service to the wharf area. The MUNI Publication "Getting Around Fisherman's Wharf" should be more widely distributed and made available in all area hotels. Cost of these brochures should be subsidized by wharf businesses, including the project.

"Preferential treatment should be provided for transit vehicles such as MUNI buses. This could take the form of transit (or diamond) lanes throughout the congested areas.

"Shuttle bus service via transit lanes should be provided from major regional transit facilities such as the Transbay Terminal and BART.

"Major downtown parking garages which currently have low demand on weekends should be used as remote parking for the wharf and project (e.g., Embarcadero Center, Alcoa Building). These garages should be connected to the wharf by the shuttle service described in 5-19." (Peter Martin)

"We have the Alcoa Building, which has 1140 parking spaces. It's closed on Friday night. It's closed on Saturday. It's closed on Sunday. It's a city garage.

"If the city could figure out how to shuttle people from the areas that are usually used in the daytime by the financial area people and able to get the people to Fisherman's Wharf . . . ." (Walter Pastore - Hearing)

"Better signage should be developed to indicate MUNI routes to the wharf area. Bus stops should have information indicating which buses should be taken to the Wharf Area. These signs should be distinctive and fit on existing bus stop signs. A similar program is being implemented for the museum in Golden Gate Park.

"The City should begin a Culture bus program similar to that in place in Chicago. MUNI buses would connect major tourist attractions via express service.

"All day transit passes should be sold to tourists to encourage transit use by them. The cost of these passes could be subsidized by hotel taxes or other visitor-derived income. Hotels and motels which provide free parking should be required to provide free transit passes to their guests.

"A transportation system management plan should be developed and implemented to reduce the number of vehicles in the Fisherman's Wharf - Pier 39 Area. Elements of the programs should include all the suggested mitigation measures discussed above. No additional development should be allowed until such a program is in place and is shown to work." (Peter Martin)

RESPONSE

Project-related and areawide mitigation measures are identified in the EIR (pp.135-146) and the background traffic study (pp.IV-1 to IV-28). In addition, the Northern Waterfront Transportation Study[28] discusses many of the measures listed in the comment, such as the pedestrian mall concept on Jefferson Street, the use of parking areas closer to the Downtown area, TSM programs to reduce parking demand, and further transit service publicity. Several of the mitigation measures identified in the comment could be required by the Planning Commission as conditions of approval for this and other projects, e.g. subsidized transit fares and transit informational brochure distribution, and shuttle buses from regional transit facilities. The MUNI F-Market line would run on exclusive transit lanes throughout most of the Northern Waterfront. The F-line would serve downtown parking areas, and would act as a shuttle between these parking areas and the Northern Waterfront. In addition, the use of the 80 Francisco garage would also exploit parking resources currently underutilized on weekends.

The Department of City Planning could impose as a condition of approval that the project sponsor participate in an areawide Northern Waterfront Transportation Management System that may be developed in the future, which was also a condition of approval for the nearby Super 8 Hotel and Clarion Hotel projects.

- The following will be added to page 144 of the EIR after the paragraph beginning "Construction activity which could result in . . . .":

  - "o The project sponsor would establish an effective Transportation Systems Management (TSM) program oriented to increase visitor and employee use of transit, subject to review and approval by the Director of City Planning."

COMMENT

"This City needs a comprehensive program of intercept parking. 60% of trips from east bay, e.g. could be directed to peripheral parking and through easy culture buses connected to Fisherman's Wharf, Golden Gate Park and other impacted areas. This is long overdue." (Sue Hestor)

RESPONSE

The opening of the 80 Francisco garage on weekends, coupled with appropriate signing along The Embarcadero, would provide 400 spaces of intercept parking. Several other garages could provide remote parking, for example Embarcadero Center and the Alcoa Center Garage, if coupled with shuttle or "culture" buses as noted in the comment. However, with advent of the F-Line Streetcar, a shuttle from downtown to the waterfront would exist.

COMMENT

"pp 137-139: Exhibits should read queuing, not queueing." (Irene Nishimura)

RESPONSE

In Webster's Ninth New College Dictionary, the variant spelling of queuing is presented as queueing on page 966.

[1]Telephone conversation with Red & White Fleet ticket office, November 21, 1988.

[2]City of San Francisco, Department of City Planning, North Point Park/Marina (Pier 39) Final EIR, EE.75.368, certified August 1976. Table F-8 on p. 95 shows external trips which relate to 45 daily trips per 1,000 GSF on weekends and 34 daily trips per 1,000 GSF on weekdays.

[3]Caltrans, "I-280 Transfer Concept Program -- Subtask 1.5.2: Data Collection," by DKS Associates, July 1982.

[4]City and County of San Francisco, Department of City Planning, Northern Waterfront Traffic and Transportation Study, by DKS Associates, March 1987, p. A-20.

[5]Caltrans, I-280 Transfer Concept Program - Subtask 1.5.2: Data Collection, by DKS Associates, July 1982.

[6]City and County of San Francisco, Northern Waterfront Traffic and Transportation Study, p. A-14.

[7]City and County of San Francisco, Northern Waterfront Traffic and Transportation Study, Table A-8.

[8]The potential increment in peak hour vehicle trips was calculated as follows:

(25,200 maximum daily 2-way person trips) * (18% cable car share) * (31% new trips) * (10.8% peak hour factor) / (3.2 people per car)
= 47 additional new vehicle trips.

If all cable car trips were instead made by private vehicle in the initial year, the parking demand would increase by an estimated 92 spaces, calculated as follows:

(12,600 maximum daily visitors) * (18% cable car share) * (31% new trips) * (42% maximum weekend parking accumulation factor) / (3.2 people per car)
= demand for 92 additional parking spaces.

[9]City and County of San Francisco, Underwater World Aquarium at Pier 39 Traffic and Transportation Study, by DKS Associates, p. III-33.

[10]Transportation Research Board, Interim Materials on Highway Capacity: Circular 212, Washington, D.C. January 1980.

[11]City and County of San Francisco, Department of City Planning, Final Environmental Impact Report, Super 8 and Clarion Hotel, 85.111E, certified October 12, 1987.

[12]City and County of San Francisco, Department of City Planning, The San Francisco Master Plan: Transportation Element, 1988, p. I.4.14 (Transit Preferential Streets Plan); p. I.4.23 (Vehicle Circulation Plan); and p. I.4.28 (Signed Bikeways Plan).

[13]City and County of San Francisco, Department of City Planning, Northern Waterfront Traffic and Transportation Study, by DKS Associates, March 1987, pp. 134, 138, 147, 154, 156, 173, 174, 188 and 192.

[14]City and County of San Francisco, Department of City Planning, Northern Waterfront Findings Report, March 1987, pp. 23, 24, 43, and 50. Off-street parking surveys were conducted by the Department of City Planning in 1985-86.

[15]Signalized intersection analysis using the Planning Method is based on the Transportation Research Board, Circular 212, 1980. Unsignalized intersection analysis is based on the Transportation Research Board Special Report 209: Highway Capacity Manual, Chapter 9: Unsignalized Intersections, 1985.

[16]City and County of San Francisco, Department of City Planning, Northern Waterfront Traffic and Transportation Study, by DKS Associates, March 1987, pp. 53-56; pp. 80-84; and Appendix p. 50-55.

[17]Based on 11/22/88 telephone conversation with MUNI information officer.

[18]Telephone conversation with Bruce Bernhard, MUNI Planning Department, November 2, 1987.

[19]Ron Niewiarowski, Project Manager, San Francisco Public Utilities Commission, telephone conversation, February 23, 1989.

[20]DKS Associates, survey of Pier 39 garage occupancy, Tuesday, July 5, 1988, 1:00-2:00 PM.

[21]Based on March 11, 1986 Pier 39 Garage Striping Plan by Harrison, Teasley & Associates.

[22]City and County of San Francisco, Department of City Planning, Northern Waterfront Findings Report, March 1987, pp. 187-190. Off-street parking surveys were conducted by the Department of City Planning in 1985-86.

[23]City and County of San Francisco, Underwater World Aquarium at Pier 39: Traffic and Transportation Study, by DKS Associates, July 1988, pp. III-14 to III-32, IV-8 to IV-28; Northern Waterfront Traffic and Transportation Study, by DKS Associates, March 1987, pp. 49, 66-72, A-40 to A-45.

City and County of San Francisco, Department of City Planning, The Northern Waterfront Findings Report, March 1987, pages 131-151 and 185-198.

[24]Based on Pier 39 parking records provided by Topper Johnston, Pier 39 Garage Manager, for 13 days in August 1987, including several days when valet parking was tested on the bottom and top floors; and for one day in July 1988, when valet parking was tested on all floors.

[25]Based on 11/22/88 telephone conversation with David Yuen, Pier 39 Garage Site Manager.

[26]Parking information provided by Topper Johnston, Pier 39 Parking Manager.

[27]Based on 11/22/88 telephone conversation with David Yuen, Pier 39 Garage Operations Manager.

[28]City and County of San Francisco, Northern Waterfront Traffic and Transportation Study, March 1987, pp. 70, 79, and 81-83.

E. AIR QUALITY

COMMENT

"4. Atmospheric contamination, During demolition, and construction, it is reasonable to expect a lot of dust and dirt to get into the air. In a residential or commercial environment this creates only a minor nuisance. In a Marina, however, it causes significant economic loss, as the abrasive particles ruin fiberglass finishes, and shorten the life of operating and safety equipment. This issue was not mentioned in the EIR." (Ray S. Mollard)

RESPONSE

The comment is noted. It is acknowledged that there are special concerns for potential damage by airborne particulates in the immediate vicinity of a marina area. In the case of a large amount of highly abrasive material, the type of damage that is described by the commenter could occur. However, due to the fact that the proposed project would be built over the water, and that there would be very little disturbance of soils during demolition and construction, the types of effects on marina equipment would not be likely.

COMMENT

"Page 57 - Air Quality As people circle for parking local air quality deteriorates. This is not discussed." (Sue C. Hestor)

RESPONSE

Additional vehicle miles traveled, particularly in already congested areas, contribute to air quality problems. Carbon monoxide, the pollutant of most concern in San Francisco, is produced in greatest volumes when vehicles are started and when they idle. As a result, it occurs in concentrations around congested intersections. The Environmental Setting section of the EIR, referred to by the commenter, describes the existing air quality environment in San Francisco and the Bay Area, and provides a discussion of the factors which contribute to regional air pollution. Existing traffic in the area resulting from drivers circling while looking for parking spaces is measured as part of this air quality setting. The Air Quality impacts discussion, pages 119 and 120 of the EIR, identifies the potential added air pollution from the project.

The Bay Area Air Quality Management District (BAAQMD) has established a threshold of 2,000 daily vehicle trip ends per day as the lower limit of the amount of travel necessary to have a measurable contribution to area air quality problems. There would be about 1,170 vehicle trip ends added as a result of the project (1,560 in the initial year). It is not possible to accurately measure the air quality impacts of such a low number of trips, both because of fluctuations in pollutant levels, and the margins of error of available analytic techniques. Any quantitative assumption that vehicle trips would be lengthened by the search for parking would be difficult to verify, and the air quality implications of such an assumption could not be measured with accuracy.

New drivers attracted to the project would most likely first approach the Pier 39 garage. If they were to find that full, it is reasonable to assume that they would not choose to return to intersections which were unacceptably congested. It is more likely that they would disperse in other directions. Direction to appropriate parking, by signs or maps printed on pre-purchased tickets, would help to make the search for parking more orderly, and reduce related impacts.

COMMENT

"We already have an air quality problem, and more congestion will mean more air quality effluents, more effluents, more hydrocarbons, nitrogen oxides into the air, creating ozone, which is a problem not only when you purify tanks, you oxidize the materials in the tank, but it also gets in the air. We have already had 12 or 14 days this season in which we have been over the Clean Air Act standards. This was probably one of those days.

"We do have an air quality problem, and more traffic congestion will exacerbate that problem." (John Holtzclaw - Hearing)

RESPONSE

Current air quality conditions in the region are described on pages 57-59 of the EIR. San Francisco's major air pollutants are carbon monoxide (CO) and total suspended particulates (TSP). Each of these pollutants results from motor vehicles. TSP also results from construction and demolition activities. The impacts of project-related traffic and construction are analyzed on pages 119-120 of the EIR.

Ozone is a regional air quality problem. Ozone standards are violated most often in the Santa Clara, Livermore, and Diablo Valleys. There have been no violations of ozone standards in San Francisco. Violations of ozone standards result from emissions of hydrocarbons and nitrogen oxide throughout the region (including San Francisco). They do not result from direct emissions of ozone. Very little ozone would be emitted by the project. It would not contribute to violations of ozone standards.[1] Please see the response to comment regarding ozonation on pages C&R-199-200.

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[1]Bill deBoisblanc, Bay Area Air Quality Management District, (BAAQMD) phone conversation, April 14, 1989.

F. WATER QUALITY AND MARINE BIOLOGY

Marine Biology

COMMENT

"p. 122: Nowhere is there a mention of where the specimens for the aquarium will come from, how they will be taken, how often they will need to be replaced (mortality in confinement), etc. This is an overlooked aspects of the 'impacts' of building and operating an aquarium. Is there an agency that regulates the taking of specimens? Are there limitations on what/how/when?" (Irene Nishimura)

RESPONSE

The fish which would be displayed in the proposed aquarium would be species indigenous to the Bay, Northern California and North Pacific waters. Since the project is proposed to use unheated, untreated local Bay water, all fish would be species which live in a similar environment.

The National Marine Fisheries Service (NMFS) Division of the U.S. Department of Fish and Wildlife Service regulates the taking and possession of marine species from United States waters. The fish would be brought to the aquarium in containers after capture. Initially, a special expedition would be commissioned to capture and deliver the number and range of species necessary to start operation of the aquarium. Fish would be quarantined after arrival at the aquarium prior to release to the main aquarium tanks. During operation of the aquarium, fish would be added to the tanks on an incremental basis as needed by the aquarium. In addition, incidental catches of interesting species by the local fishing industry could be brought to the aquarium for display.

All of the fish brought to the aquarium have a natural mortality rate. This may or may not be accelerated by their presence in the aquarium. A number of factors related to the aquarium environment could lead to lengthened life spans for aquarium fish, including lack of natural predators and available medical treatment of diseases. Offsetting this could be factors which could shorten fish lives such as the dangers of confinement, etc.

COMMENT

"The DEIR correctly indicates impacts of shading on phytoplankton, but is the average EIR reader expected to know that phytoplankton are microscopic water plants? That they serve as food for small animals and are important because of their role at the bottom of the ecological food pyramid?

"Does the average EIR reader know what 'benthic' organisms are? What are the consequences of 'a shift in community structure toward organisms adapted to low light levels'? Which organisms are so adapted?

"I do not think that the project is likely to have physical effects which would cause significant biological effects, but I think that the analysis should be written so that the reader can understand the basis for coming to this conclusion." (Selina Bendix)

RESPONSE

The term "benthic" refers to the habitat for plants and animals at the sea bottom. In this case, it refers to the Bay bottom immediately below the proposed project, including the sea bed and the water several inches above it.

The Bay supports a wide variety of benthic organisms. The particular organisms in a particular part of the Bay bottom are a function of light intensity, food supply, quality of bottom substrate, water temperature and salinity, and many other characteristics of the environment. Shading of a portion of the Bay bottom at Pier 39 could favor organisms which typically dwell at deeper depths with a lower light intensity. Because so little of the Bay bottom is being affected (in relation to the overall Bay benthic environment) it is not expected that there would be any noticeable change in the balance of organisms on the Bay bottom.

The comments regarding phytoplankton are noted. Page 123, second paragraph, the fourth sentence is revised to read as follows (revisions are underlined):

"Shading of the surface water layers would make conditions under the structure less conducive to phytoplankton (<u>microscopic water plants</u>) growth than elsewhere in the Bay. <u>Phytoplankton play an important role in the Bay/ocean food chain, serving as</u>

the primary food for small benthic (ocean bottom) and pelagic (open water) organisms.

COMMENT

"P. 123, Para. 3. The area that would be affected by pile driving cannot be estimated to the nearest tenth of one percent, as implied by the 'approximately 1,121 sq.ft.'" (Selina Bendix)

RESPONSE

Page 123, third paragraph, the first sentence is revised to read as follows (revisions are underlined):

"Pile driving would destroy benthic organisms inhabiting approximately 1,100 sq. ft. of the Bay bottom."

Page 123, fourth paragraph, the first sentence is revised to read as follows (revisions are underlined):

"Approximately 1,100 sq. ft. of benthic habitat would be permanently eliminated by the piles."

COMMENT

"P. 123, Para. 4. The temporarily affected benthic habitat will be greater than the area permanently eliminated by the piles. The temporarily affected area and the permanently eliminated benthic habitat. The difference is probably not environmentally significant, but the EIR should be accurate." (Selina Bendix)

RESPONSE

Page 123, paragraph four, of the EIR states, "Approximately 1,121 sq.ft. of benthic habitat would be permanently eliminated by the piles . . . ," correctly suggesting the permanence of the impact.

Page 123, fourth paragraph, the following is added after the first sentence:

"A larger area of benthic habitat would be temporarily disturbed during the pile driving phase of project construction."

COMMENT

"Will waste water discharge from the aquarium adversely affect Dungeness crab populations, herring, and other species?" (Christopher Martin - Hearing)

RESPONSE

The discharge from the proposed project, the filtered "blowdown" water, would not adversely affect the population of any species in the Bay. The "blowdown" water which would be discharged to the Bay would be the same water, in terms of content and quality, as that water circulating through the aquarium itself. Since the aquarium would be populated by local species, it would not be possible for aquarium water to adversely affect Bay species without first showing indications of adverse effects on aquarium species. To the extent that it is necessary for the project sponsor to maintain a high quality marine environment in the aquarium, it is not expected that discharge of blowdown water would have any adverse effects on Bay species. The discharge from the proposed aquarium would meet the discharge standards set by the Regional Water Quality Control Board which have been established to protect the health of all organisms that dwell in the Bay.

Treatment of Aquarium Water

COMMENT

"On page 4 under Water Quality/Biology, references are made to the disinfection of water placed into the tank and on page 121 references are made to conditioning chemicals. The only treatment given to the water that is to be put into the tank from the Bay, other than filtration, is an ozone gas treatment which removes microbes and bacteria; it does not involve the introduction of any chemicals into the water. While the term 'disinfection' may be appropriate, if it implies the use of chemicals, this is not the case. The reference on page 121 to 'conditioning chemicals' is misleading. The only chemicals ever added to the water in the tank will be veterinary drugs prescribed for the prevention of disease among the fish in the tank. Such drugs as are occasionally prescribed protect the fish from parasites and bacteria; they would not pose any hazard to fish in the natural environment. Such drugs would only be used when disease occurs and must be arrested; this may occur once a year or once every few years, depending on the incidence of disease." (John M. Sanger)

"The blowdown wastewater will contain 'conditional chemicals' used to inhibit the growth of parasites and bacteria (p. 121). These chemicals should be identified in the EIR. We are concerned that these chemicals may cause acute or chronic toxicity in the receiving water. We cannot assess this toxicity concern without knowing the chemicals' potency. The Regional Board's Basin Plan discourages the use of biocides in artificial lakes and lagoons. The discharge would have to comply with Basin Plan toxicity requirements." (Stephen Hill, RWQCB)

"P. A-27 says that an organic phosphate called Dylox 'would be used a maximum of 3-4 times a year to treat parasites.' What is the chemical name of this material? Organic phosphates include neurotoxic and immunotoxic pesticides. How can the reader judge the appropriateness of the statement without knowing the chemical identity and something more than that it has a short half-life? In fact, Dylox is the pesticide chlordimefon, related to parathion, but not as toxic as parathion. One teaspoonful may be enough to kill a 170 pound adult. No potential health hazard? The use of this chemical is not mentioned in the water treatment description of p. 121, Para 1." (Selina Bendix)

"When antimicrobial and antifungal agents are used to treat ailing fish, what would be the ecological effects of such chemicals in the effluent? What volume of Bay water would be required to dilute them down to a concentration which would not affect normal Bay organisms? Would use of a diffuser on the outfall improve dilution and mitigate such an effect? Antibiotics can be disruptive of the normal ecology of the base of the food pyramid and this potential impact should be evaluated." (Selina Bendix)

"I'd like to point out that it's easy to think of anything that is discharged into the bay as relatively small amount of discharge compared to the volume of the bay and to think that fish can swim away from anything they don't like. But we need to remember that there are organisms that grow on pilings that can't get away from something they don't like. So, these discharges could affect the ecology of what lives on the pilings, and some fish lay their eggs in amongst these other organisms that live on the pilings so that if there is a local discharge of something that is toxic, even

though it may be diluted to an irrelevant level by the time it gets washed back and forth on the tide, it may not be diluted to an irrelevant level as it goes by the fish eggs on the pilings." (Selina Bendix - Hearing)

RESPONSE

Disinfection may or may not involve the use of chemicals. Ozonation is a chemical process but one which does not leave residual chemical compounds in the disinfected water. "Conditioning" is the term conventionally used to describe the addition of small amounts of chemical compounds to water to improve its characteristics in some way. Chemicals intended to kill undesirable organisms in an aquarium, such as fish parasites, fit this definition. Disinfection can be an element of water conditioning. Another element might be pH adjustment.

- The project sponsor indicates that the only conditioning chemical that they intend to use is Dylox, a proprietary aquarium pesticide. The active ingredient is trichlorophon, which consists of 0,0-dimethyl-2,2,2-trichloro 1-hydroxyethyl phosphonate or 0,0-dimethyl-1-hydroxy-2-trichloro methyl phosphonate.

- Dylox is a hazardous material and must be handled and stored carefully. Properly handled, it would pose no threat to human health. Ingestion of undiluted Dylox could be hazardous and possibly fatal to humans. Similarly, many household products, including pesticides, kitchen and bathroom cleaners and automotive cleaners and solvents could be hazardous or fatal if ingested. Dylox would be stored and handled in accordance with the manufacturers instructions and would be used only by appropriately trained personnel. Dylox would not be removed in the aquarium filters as currently proposed although it could be removed by charcoal filters. Dylox acts as a cholinesterase inhibitor, similar to flea powders used to control fleas on pets. It breaks down into harmless chemical compounds, including H_3PO_4 (phosphoric acid), and other salts, at a rate dependent on temperature and pH in both fresh and saltwater aquarium environments.[1] The salts are mainly chlorides, similar to or the same as those found in sea water and Bay water (e.g., sodium chloride, which is table salt). At an application rate of .25 ppm, use of Dylox would result in an addition of chlorides to Bay water of less than 1 milligram per liter; the chloride concentration in Bay water is about 15,000 milligrams per liter, so the addition would not be noticeable.[1A] DDVP is an intermediate breakdown product. It is a toxic

chemical, as is trichlorophon, although toxicity studies show that it is harmful at concentrations far higher than the proposed .25 ppm. Studies done in the 1970s on Dylox use in fish farm ponds showed that, after four weekly applications at .25 ppm, no traces of DDVP or trichlorophon were detectable to the limits of the testing method used (0.01 ppm) eight hours after the last application.[1A] It is estimated that Dylox would consist of inert compounds after four to five days in the project tank.[2]

Dylox is a registered pesticide in the State of California and is commercially available in most aquarium supply stores under various trade names such as Masoten, Ditterex, Chlorophos and others. Pesticide registration is the responsibility of the Department of Food and Agriculture pursuant to Division 7 of the Food and Agricultural Code. The Pesticide Registration program is acknowledged and certified by the State Resources

Agency as the functional equivalent of CEQA (see Title 14 California Code of Regulations, Section 15192, Pesticide Regulation Program). The Department of Food and Agriculture evaluates the proposed uses and toxicity data to determine the safety of its use and requires the product to be labelled with instructions for its use and associated dangers. Dylox would be used in accordance with the label instructions and would be stored in a locked enclosure in accordance with the Department of Food and Agriculture requirements for pesticide storage.

Dylox would be used occasionally, perhaps quarterly, to eradicate fish parasites. It would be added to the aquarium tank at a concentration of about 0.4 milligrams per liter (mg/l) and held for several days before discharge. It is clear from its use in aquariums (including Monterey Bay Aquarium, the Point Defiance Zoo and Aquarium and the Steinhart Aquarium) that it is not toxic to marine fish at concentrations of 1 mg/l or less, but that it is toxic to certain types of fish parasites. The compound would not have an adverse impact on Bay aquatic life after its concentration has been reduced by dilution and chemical breakdown in the tank. The compound would be inert when discharged into the Bay.

Add the following to the end of page 147 of the EIR:

> "Before a discharge permit would be issued, by the Regional Water Quality Control Board, the RWQCB may require bioassays using Regional Water Quality Control Board approved test animals to determine an acceptable concentration of Dylox in the discharged effluent. These test animals include those commonly found in the Bay, some of which would probably be placed in the proposed aquarium. Dylox-treated water would then be held in the aquarium tank for sufficient time for its concentration to decline to the level determined by the Regional Water Quality Control Board as a result of these tests to be acceptable. While this is the most likely approach to assuring that harmful amounts of Dylox would not enter the Bay, other methods, such as using a charcoal filter system would also be available, and could be required by the Regional Water Quality Control Board."

COMMENT

> "P. 121, para 1, line 9. It is stated that the make-up water would 'be disinfected with ozone.' How is this ozone to be generated? I believe that ozone is a good method of disinfection but the methods with which I am familiar with are energy intensive and ozone is a hazardous material which requires appropriate safety precautions.

"P. A-11 states 'nor would the proposed project create potential health hazards.' In fact, ozone poses a substantial health hazard. The American Conference of Governmental Industrial Hygienists recommends a ceiling exposure limit of 0.1 parts of ozone per million parts of air. In humans the symptoms of exposure are: irritation of mucous membranes of nose and throat, choking, coughing, severe fatigue, bronchial irritation, headache, shortness of breath, drowsiness, reduced ability to concentrate. Pulmonary edema (accumulation of water in the lungs) may occur, sometimes hours after exposure has ceased. If exposure is severe, the pulmonary edema is fatal. Ozone causes chromosomal aberrations similar to those caused by radiation.

"Ozone reacts explosively with a number of chemical compounds. The potential for the presence of such compounds on the project site should have been evaluated and mitigation measures to avoid such potential reactions developed. Use of ozone in a densely populated area requires the careful development of mitigation measures and an alternatives analysis to give the public an understanding of the hazards of alternative disinfection methods." (Selina Bendix, with identical points raised at hearing)

"4. The Association has been advised that the aquarium would generate and utilize considerable quantities of ozone to treat and remove certain impurities or organisms from the aquarium water supply. If this information is correct, then the draft EIR fails to address the impact of such ozone production and usage on the Marina slip owners and tenants." (Robert W. Pickard)

RESPONSE

The proposed project's water circulation and filtration system would include a complete ozone treatment system manufactured by Ozone Research and Equipment Corporation (OREC) of Phoenix, Arizona. It is a system which is used by many other aquariums, sea parks and zoos in the United States and abroad. Other facilities using the OREC ozone system include Seaworld, the Denver Zoo, the Point Defiance Aquarium, Portland City Zoo, Baltimore National Aquarium, Vancouver City Zoo, and others.

Page 121, first paragraph, the last sentence is revised as part of a new second paragraph:

> "The make-up water would pass through a separate pre-filter and would be disinfected with ozone before being added to the aquarium, preventing parasites and bacteria present in Bay water from entering the aquarium. Ozone can be a health hazard; however, standard operating procedures for ozone production and handling avoid such hazard. The ozone would be generated in a separate room at the second floor level of the proposed project. The room would be provided with an ozone monitor and alarm. This is standard equipment for the system. Ozonation of the circulating sea water is achieved by injection via a porous stone diffuser into a contact tower located adjacent to the generation room. As the ozone passes through the aquarium water, the ozone is broken down and has a disinfecting property. Any residual ozone which may discharge from the free water surface at the top of the tower is collected in a cowling, or enclosed hood, and passed through a catalytic ozone destruct unit before being discharged to the air above the proposed project building."

The use of ozone with this complete system of ozone generation, ozone destruction and ozone monitoring would not allow for any harmful accumulation of ozone within or around the project. Thus, it is correct to conclude that the project would not "create potential health risks." Because the ozonation unit is fully enclosed, there will be no opportunity for ozone to come into contact with other chemicals.

The following is added to page 147 as the second mitigation measure under Water Quality and Marine Biology:

> "In order to avoid health hazards associated with the use of ozone, the project would employ standard operating procedures for ozone production and handling, including a complete system of ozone generation, ozone destruction, and ozone monitoring."

There are several alternatives for disinfection but the most common are chlorination and ozonation. The only disinfection process that does not use chemicals is exposure to ultra-violet light. However, ultra-violet light disinfection systems are not as effective or easy to maintain as chemical systems.

Water Quality Standards

COMMENT

> "The backwash water will contain suspended solids, a particular BOD content and high levels of bacteria. What impact will these events have on the water quality at the discharge location? What impact will they have on the local marine organisms? The DEIR should address these issues.

"Backwash water will contain silt and algae. The DEIR states that these particles will probably not have adverse environmental effects because they had been previously removed from bay water. Yet what effect will result from discharging them in greatly increased concentrations? Will the siltation rate accelerate? Will dissolved oxygen in adjacent water decline?

"The DEIR states that backwash from the recirculating system would have a greater pollution causing potential, yet declines to state what the potential is. There should be a comprehensive discussion of each aspect of these potential impacts. What are these potential pollution-causing impacts? The DEIR states that they could be mitigated by various means. By what means?" (Marc Holmes)

"Page 122, Environmental Impact Water Quality Marine Biology - Third parag quote: 'While backwash from the prefilter would not meet the suspended solids requirement of 30/MG-L, it is unlikely that adverse environmental affects would result because the suspended material would consist of silt and algae previously removed from bay water.' It would seem that the level of study in this area is not sufficient if words like 'unlikely' need be included." (Peter Brown)

"Backwash wastewater will contain significant concentrations of BOD, suspended solids, and bacteria (p. 122). The EIR should discuss the option of discharging this waste to the city's sewer. We cannot waive waste discharge requirements for this discharge. The effluent would have to meet Basin Plan effluent limitations, including 30 mg/l (monthly average) for BOD and suspended solids." (Stephen Hill, RWQCB)

RESPONSE

Since publication of the EIR, changes have been made to the project design which affect the filter backwash system. Under the new design, backwash water from both the recirculating filters and the pre-filter, a total of approximately 20,000 gallons per day, would be sent to the City's combined sewer system. The "blowdown," the filtered aquarium tank water, would be released into the Bay below the proposed aquarium facility. Designed as such, there would be no potential impacts of the release of backwash water into the Bay.

Page 147, the last paragraph, the second bullet item is moved to be the third bullet item under "Measures Proposed To Be Included in the Project."

COMMENT

"P. 60, Para. 1, sentence 2. The stated relationship between bacterial contamination and sewer overflows is incorrect. During severe storms the streets are washed relatively clean and any bacteria in the overflows are well diluted. It is at the beginning of the overflows of a storm just big enough to cause overflows, particularly when it has not rained for a while and the streets are dirty, that the greatest number of bacteria are present in the overflows." (Selina Bendix)

RESPONSE

The EIR is correct. Regardless of the duration of the wet weather overflow, bacterial concentrations during a sewer overflow always exceed applicable water quality standards. There may be some initial elevation in bacteria counts, relative to later in the overflow, but bacteria counts remain high as long as the overflow continues.[3]

COMMENT

"P. 62, text Para 1. The second complete sentence, 'Effluent limits for toxic materials are shown in Table 5, page 63' is misleading. It implies that the materials listed in Table 4 are not toxic, which is untrue. They would not be regulated if there were no concern about their toxicity. The reason that Residual Chlorine limit, listed in Table 4, is zero is the extreme toxicity of residual chlorine to Bay organisms." (Selina Bendix)

RESPONSE

The Regional Water Quality Control Board regulates the discharge of many different constituents for a number of reasons, including water appearance, necessary thresholds of oxygen content, and toxicity. Toxicity, according to Webster's New World Dictionary, is "the state, quality, or degree of being toxic or poisonous." Thus, it is clear that the RWQCB provides effluent limits for substances which, although not "toxic," could be harmful. Table 4 summarizes the "general effluent" levels regulated by the RWQCB. These are measured in monthly average milligrams per liter. For certain toxic materials,

particularly those which are persistent, such as heavy metals, the RWQCB has established a different standard for measurement, the standard is 24-hour average concentrations in micrograms per liter. The inclusion of a material on the list on Table 5 does not make a statement on the rationale for inclusion of a material on Table 4. For clarity, Table 4 is retitled as follows (revisions are underlined): "Conventional Pollutant Effluent Limits for Discharge to San Francisco Bay."

The title of Table 5, "Toxic Material Effluent Limitations for Discharge to San Francisco Bay" clearly identifies the chemicals listed in that table as toxic. The table identifies that the Regional Water Quality Control Board has established limits for their discharge into the Bay.

For clarity, Table 5 is retitled as follows (revisions are underlined):

> "Selected Toxic Material Effluent Limitations For Discharge to San Francisco Bay."

Table 5, the source is revised to read as follows (additions are underlined):

> "Source: Water Quality Control Plan, San Francisco Bay Basin Region (2), California Regional Water Quality Control Board, San Francisco Bay Region, December 1986, Table IV-1, p. IV-3."

COMMENT

> "What are the suspended solids and biochemical oxygen demand (BOD) of Bay water? The stated figures are meaningless to the reader in the absence of comparison to the present situation and an analysis of the known impacts of the differences on water quality (increased BOD can result in decreased dissolved oxygen as oxygen is consumed by nonphotosynthetic organisms metabolizing the organic compounds responsible for much of the BOD) on Bay organisms." (Selina Bendix)

RESPONSE

The biological oxygen demand (BOD) and suspended solid contents of Bay waters are measured infrequently because they provide little useful information. Although they vary with location, depth, weather and season, they are usually low, less than 1 mg/l. The discharge from the proposed project would be required to meet the standards set by the Regional Water Quality Control Board for the protection of water quality and aquatic life.

Page 121, the following is added after the second paragraph:

"The overall quality of the blowdown water would be approximately equal to the Bay water, with minor variations as described above. It could be expected that the BOD of blowdown water would be less than 1 mg/l, like the entering Bay water. This would clearly be within the effluent limits for BOD of 30 mg/l set by the RWQCB."

COMMENT

"I would expect bacterial growth in the filters. What would be the bacterial content of the filter backwash water? Could conditions promoting the growth of organisms pathogenic for Bay organisms occur? What is there no testing program to ensure that the effluent from the filter backwash is indeed benign?" (Selina Bendix, similar comment at hearing)

RESPONSE

The backwash of filters into the Bay is no longer proposed. Therefore, the presence of bacteria pathogenic to Bay organisms is no longer a potential impact. The City sewage collection system is home to abundant and varied microbial flora and fauna. Raw sewage has a coliform density of 10^6 to 10^8 mpn/100 ml. Although there is little data on the bacterial content of aquarium filters, there is no evidence to suggest that their addition to the sewage collection system would pose any problems.[4]

Bay Water Circulation

COMMENT

"P. 123, Para. 2. 48-inch diameter piles seem unusually large. How do they compare in size with other nearby piles? If they are considerably larger than typical piles used along the San Francisco shoreline, would any difference be detectable in the local current effects compared to smaller piles?" (Selina Bendix)

RESPONSE

The 48-inch concrete piles would be used to support the aquarium structure. These piles would be larger than the typical piles supporting piers in the Bay, which generally range from 18- to 24-inches. The 48-inch piles would be necessary to support the weight of the aquarium structure, which exerts about three times the loading of standard pier

structures, and to meet seismic requirements. Although the majority of the existing Pier 39 structure is supported by 18- to 24-inch piles, the perimeter accessway, constructed during recent improvements to the pier in the 1980s, is supported by 48-inch piles similar to those planned for the proposed project.

The EIR assumed pile of the size proposed and described. Smaller size piles would result in less impact, although it is not likely that there would be any noticeable difference in the effect of the project's large piles on marina currents if they were a smaller size.

COMMENT

> "P. 123, Para. 5. Frictional effects cannot cause a current to accelerate. It is the Venturi effect which does this. What does 'slightly upstream' mean? Inches, feet, yards? What size current speed decrease is required to 'appreciably affect sedimentation'? The statement that effects on sedimentation would never occur is an unsupported assertion." (Selina Bendix)

RESPONSE

The water currents around the new structure have not been calculated to enable a precise definition of how much slower currents would be or how far from the new piles the currents would slow down. General information on currents in the Pier 39 area is contained in the USCGS tidal current maps and in a study by the late Hugo Fischer of the University of California. Observation of the many other pile-supported structures on the San Francisco waterfront indicates that they do not affect large-scale water movements in San Francisco Bay, nor can they result in increased siltation.

"Slightly upstream" could mean inches, feet or yards but not miles. The authors believed that the use of the adjective "slightly" helped to make such a distinction and was, thus, useful to the reader. In the same way the adverb "appreciably" was used to help the reader better understand the significance of any siltation that might occur. It cannot be said that no siltation would occur, only that if it did its significance would be minor.

The slight acceleration of current between the piles is, as the commentor notes, attributable to the Venturi effect.

The second to last sentence on page 123 of the EIR has been changed to read as follows (revisions are underlined):

> "New piles would cause the current to slow slightly upstream of the piles and accelerate between the piles."

COMMENT

"Right now because of the Pier 39 project -- at Pier 33 and 35, which I am a member of the cruise task force, they have to dredge every year the Port of San Francisco at a tune of $120,000 a year. What are these pilings and silt coming in going to do to the passenger terminal next door? Right now it's costing the Port money." (Joseph Alioto - Hearing)

"My concern here is that the discharge of water from the several sources will stir up the sediment on the bottom, and will then redistribute it, creating possible shoals within the Marina. One of the Filter Backwash operations described on pages 121-22 dumps over 1,000 gallons per minute for five or six minutes, at some unspecified location within the Marina. That is a lot of water, and it is going to stir up the mud within the sea wall protected area. The mud will settle somewhere, possibly where it is will create a problem. This needs study." (Roy S. Mollard)

"There is no indication where this water is going to be dumped into the Marina and there is no indication of what that is going to do to the sediment on the bottom. With that kind of flow, I suggest it is going to get redistributed, may well be redistributed to some place where it becomes a hazard." (Roy Mollard - Hearing)

"5. The draft EIR fails to adequately address the impact of the discharge of large quantities of water from the proposed aquarium particularly with respect to bottom disturbance and resulting siltation of the public recreational Marina. Nor does the draft EIR adequately address the impact of the water flows from aquarium circulation and filter back-washing on the slip owners and tenants of the Marina. Nor does the draft EIR adequately address the routing, size, and impact of the outflow pipe system that would serve the proposed project." (Robert W. Pickard)

"There are also issues of debris in the water and sediment that may or may not present a hazard." (Roy Mollard - Hearing)

RESPONSE

As was described in a response to comment on page C&R-11, the proposed water circulation system would draw seawater from the end of Pier 39 and would discharge the filtered "blowdown" water from a pipe below the proposed aquarium structure. All filter "backwash" water would be discharged to the City combined sewer system. The blowdown water would be discharged via an eight-inch diameter pipe to the Bay under the proposed building. The pipe would be turned horizontal at the discharge point. The outlet would be eight feet above the Bay bottom and a minimum of four feet below the water surface.

The amount and rate of water discharged from the outflow pipe would not disturb the Bay bottom or the water surface. The maximum flow rate of discharge would be 264 gallons per minute (gpm). Since the outlet would be submerged, the pipe at the outlet would always flow full and hence the maximum velocity of discharge would be 1.7 feet per second. The water leaving the pipe would have a kinetic energy due to this velocity. This energy would be dissipated in the seawater at the outlet. It has been calculated that the energy to be dissipated per second would be equivalent to 0.003 horse power (2 watts). This is a very small quantity of power and would have no effect on the water surface and would not disturb the Bay bottom in any way.

As there would be no disturbance of the Bay bottom, there would be no change in the natural siltation and littoral movement that occurs within the marina.

Regulatory Agencies

COMMENT

"The Basin Plan prohibits discharges to San Francisco Bay that do not receive an initial dilution of at least 10:1. At some point, the project proponent will have to demonstrate such dilution (or seek a Basin Plan exception) if the Bay discharge is proposed." (Stephen Hill, RWQCB)

"Any person proposing to discharge 'waste' (as that term is defined in the California Water Code) to surface waters in California must apply for an NPDES permit. The backwash discharge would certainly trigger an NPDES application, and the blowdown

waste may trigger an application, depending on the characteristics of the conditioning chemicals used." (Stephen Hill, RWQCB)

RESPONSE

The volume of the blowdown discharge would be small relative to mass water movements in the vicinity of Pier 39. The discharge pipe outlet will be designed to achieve an initial dilution with Bay water of 10:1. It may be possible to achieve this with a simple open pipe end. If this proves insufficient, a diffuser will be intalled on the outlet. The diffuser would consist of a length of pipe with a number of outlets or ports. Discharge through a diffuser promotes a higher level of initial dilution.

It is anticipated that with the revised backwash water disposal plan (into the City sewer system), only an NPDES permit for discharge of the "blowdown" water may be required. The project sponsor would be required to apply for and receive such a permit prior to project operation.

Mitigation

COMMENT

"I note that there is no commitment to implementation of measures to mitigate water quality impacts. Measures to protect Bay water quality should be required as permit conditions. I trust the staff of the Regional Water Quality Control Board (RWQCB) to protect the Bay, but the EIR is supposed to be a full disclosure document and I think we need to know more about the potential project impacts and methods of mitigation. The project sponsor needs to know sooner rather than later what the costs of appropriate mitigation might be." (Selina Bendix)

RESPONSE

The project sponsor would be required to implement all water quality mitigation measures as part of his compliance with the requirements of the RWQCB in order to receive his NPDES permit. The EIR can only suggest possible mitigation measures acceptable to the RWQCB and cannot make commitments for that agency. Also, please see response to comment pages C&R-202-203.

COMMENT

"P. 147, Water Quality and Marine Biology mitigation measures. The format of this section is misleading because the 'Measures Proposed to be included in the Project' heading appears to apply to the measures listed as 'Other mitigation measures to be implemented as part of the project would be determined by RWQCB requirements, but could include one or more of the following.' " (Selina Bendix)

RESPONSE

The list of measures which could be required by the Regional Water Quality Control Board for issuance of a NPDES permit were included in the Draft EIR to identify a range of requirements which could be imposed on the project but which were, at the time, undetermined. Since publication of the Draft EIR the project sponsor has opted for a water circulation and filtration system which would direct backwash water from the recirculating and prefilters to the City combined sewer rather than the Bay. As such, all of the measures listed under other mitigation measures at the bottom of page 147 are no longer relevant for the project and are, thus, deleted.

COMMENT

"When a mitigation measure would have impacts of its own, CEQA requires a discussion of such impacts. What would be the effect of discharge of backwash to City sewers? Is local sewer capacity adequate to handle the additional volume? Is treatment capacity available? Would this have an effect on the frequency of overflows? If a settling tank were to be used, what would be done with the tank sludge? If the backwash water were to be disinfected, what disinfectants could be used and what are their impacts on Bay organisms?" (Selina Bendix)

RESPONSE

Because the City sewer collection and treatment system is designed to handle both storm discharge and sanitary flows, it has ample capacity to accommodate filter backwash water. The effect of backwash discharge on frequency of sewer overflows would be negligible because the flow from filter backwash is small relative to the runoff flows which produce sewer overflows. According to the Industrial Waste Division of the Department of Public Works, no settling tank or disinfection is necessary before backwash could be discharged to the sewer.[4]

The discharge of backwash into the sewer system would result in no new impacts beyond those analyzed in the EIR. It would pose no problems for the sewer system as it currently operates. If the City were to undertake a major water reclamation effort, the salt content of the backwash water could be of concern. Were such an effort to be undertaken, it is possible that fresh water, from the City water system, would have to be used to clean the filters.[4] This would increase the demand for City water by up to 20,000 gallons per day, which is approximately equivalent to the amount of water used by 100 households per day. According to the San Francisco Water Department, under normal conditions, the City could supply this amount of water to the project.[5] However, if the current drought situation continues or worsens, the Water Department would explore with the project sponsor methods of reducing water consumption, or could apply restrictions on usage.

Miscellaneous

COMMENT

"Water Quality. The project will be on a platform extended over the Bay. The DEIR discusses the effect of the platform on shading, water circulation, water quality and the fish and wildlife communities. The document analyzes the effect of the building and pilings in this regard, but does not fully analyze the effects of the thousands of gallons of water pumped and discharged from the project into the Bay. The facility will use Bay water within an existing marina facility to maintain the level of water in the aquarium, to clean the aquarium filters, and to provide continuous 'blowdown' discharge water. The DEIR states that 'it is unlikely (there will be) adverse environmental impacts from water discharge.' We believe the document provides insufficient information to develop this conclusion. We believe the environmental document must provide a greater analysis of the effects of the water use and water discharge from the project." (Joan Lundstrom, BCDC)

RESPONSE

As was described in the response to comment on page C&R-201, the filter backwash water would be discharged to the City sewer system and only the blowdown water would be released to the Bay. The quote referred to in the comment was made in reference to potential discharge of backwash water to the Bay, which would no longer occur under current designs.

Removing and returning 70,000 to 380,000 gallons of water each day to the bay would have no adverse environmental effect. Billions of gallons of water enter and leave the bay on each tidal cycle or twice each day. Because the discharge would have to meet requirements established by the Regional Water Quality Control Board to protect the health of aquatic life and because the discharge water would have come from an aquarium containing marine organisms similar to or the same as those presently inhabitating the Bay (see page 121 of the EIR), the authors of the EIR do not expect any environmental effects from this discharge.

COMMENT

"p. 60: First paragraph, end. What does the statement 'the appearance of waters may also be impaired' mean? Can appearance be impaired?" (Irene Nishimura)

RESPONSE

The sentence referred to by the commentor describes the conditions currently resulting from combined sewer overflows during severe storm conditions, identifying that not only are there bacterial changes in the water, but that the visual appearance of the water is degraded as well. Page 60, first paragraph, the second sentence is revised to read as follows (revisions are underlined):

"During severe storms the bacterial content of nearshore waters rises as a result of combined sewer overflows; the appearance of waters may also be degraded."

COMMENT

"p. 121: First sentence, should read affect, not effect." (Irene Nishimura)

RESPONSE

The comment is noted. Page 121, first paragraph, the first sentence is revised to read as follows (revisions are underlined):

"To understand how the proposed Underwater World aquarium might affect water quality it is necessary to understand how the aquarium water circulation and filtration system would work."

COMMENT

"P. 60, Para. 1, sentence 1. This is an unsupported assertion." (Selina Bendix)

RESPONSE

The first sentence of the first paragraph on Page 60 has been deleted.

COMMENT

"P. 60, Para 3. The Basin Plan amendments were approved by the SWRCB in 1987." (Selina Bendix)

RESPONSE

The comment is noted. Page 60, third paragraph, the first sentence is revised to read as follows (revisions are underlined):

"The current San Francisco Bay Water Quality Control Plan (Basin Plan) amendments, adopted in 1987 by the San Francisco Regional Water Quality Control Board (RWQCB), define water quality objectives to protect and enhance defined beneficial uses."

COMMENT

"P. 62, Table 4, footnote 1. Minor typo: 'expressed in milligrams.' " (Selina Bendix)

RESPONSE

The comment is noted. Page 62, Table 4, Footnote 1 is revised to read as follows (revisions are underlined):

"Monthly average expressed in milligrams per litre (mg/l)."

COMMENT

"P. 63, Table 5. What are the definitions of 'Shallow' and 'Deep'?" (Selina Bendix)

RESPONSE

The terms "shallow" and "deep" in this context do not refer exclusively to the depth to bottom at the discharge point, but to a combination of factors which influence dilution

including water velocity, depth, characteristics of receiving water, and design of discharge device. Shallow water discharges are defined by the Regional Water Quality Control Board as those that receive less than 10:1 initial dilution. Deep water discharges are defined as those that receive 10:1 initial dilution or more. Initial dilution or mixing occurs immediately after wastewater is discharged, as a result of the momentum of the wastewater stream or as a result of density differences between the wastewater stream and the receiving water. Ten-to-one dilution means that one part of wastewater mixes with ten parts of the receiving water.[6]

COMMENT

"P. 122, Para. 1. Are '20,000 gallons per day' a lot or a little? This should be compared to something similar, such as residential consumption so that the reader can judge the significance of this discharge." (Selina Bendix)

RESPONSE

Please note that filter backwash water is now proposed to be discharged to the sewer rather than to the Bay. Twenty thousand gallons each day is approximately equal to the amount of water used by 100 residential units in San Francisco.

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[1]Terry McDowell, University of California, Davis, Toxicology Department, Fish Laboratory, telephone conversation May 3, 1989. T. Bill Waggoner, Ph.D., Biochemistry Manager, Research and Development, Mobay Corporation, telephone conversation July 6, 1989.

[1A]T. Bill Waggoner, Ph.D., Biochemistry Manager, Research and Development, Mobay Corporation, telephone conversation July 6, 1989.

[2]John Rupp, Marine Biologist, Point Defiance Aquarium, telephone conversation, October 12, 1987.

[3]James Salerno, Bureau of Water Pollution Control, personal communication, February 28, 1989.

[4]Steve Medberry, Division Engineer, Industrial Waste Division, telephone conversations, December 1, 1988 and April 11, 1989.

[5]John Mullane, Manager, Commercial Division, San Francisco Water Department, telephone conversation, April 21, 1989.

[6]Stephen Hill, Regional Water Quality Control Board, telephone conversation, May 1, 1989.

G. GEOLOGY/TOPOGRAPHY

COMMENT

"Page 65 - 700,000 gallons of water above ground on piers in an earthquake will slosh a lot more than your average 50-gallon aquarium. Please discuss." (Sue C. Hestor)

"One is that we have this huge tank of water, 3,000 tons of water, approximately. It's a dynamic load. In case of an earthquake, there are separate dimensions northwest -- north, south, east, west -- with different natural frequencies. It is going to be built on piers with gravel under it, but it is an extremely tricky analysis to calculate the dynamic loading of this mass as it moves back and forth in an earthquake.

"I am sure the Commission would want to make sure that such analysis is done very accurately and very carefully." (John Holtzclaw - Hearing)

RESPONSE

The dynamic analysis for the water loading of the structure is indeed different from the standard dynamic loading analysis for solid structures. The components of bedrock and soils acceleration generated by seismic activity along the San Andreas fault or any other major fault in the San Francisco Bay Area would differ depending on the location of the epicenter of the seismic event. The design earthquake used for the loading analysis would be established by the structural engineer for the project in consultation with the project's geotechnical engineer. The safety requirements for dynamic fluid loads are enforced through the Uniform Building Code standards for Seismic Zone Four based on Recommended Lateral Force Requirements, produced by the Structural Engineers Association of California (1980, fourth edition, revised). For projects on Port property, the Port of San Francisco's Engineering Department is responsible for implementation of the San Francisco Building Code, which is the same as the Uniform Building Code standards with modifications to add specific requirements for San Francisco.

H. NOISE

COMMENT

"p. 4 At the bottom of the page, it says pile driving will take 7 to 9 weeks; on p. 129 it says 7-9 months." (Irene Nishimura)

RESPONSE

The reference to months on page 129 is in error; the correct time frame is seven to nine weeks. Page 129, first paragraph, the second sentence is revised to read as follows (revisions are underlined):

"Pile driving would then occur intermittently over a seven to nine week period in which approximately 114 piles would be driven."

COMMENT

"The EIR addresses several noise issues that are related only to the retail establishments on the pier and the residential and retail across from the pier. I think that the noise considerations have to be reviewed for the boat owners, the slip owners, because the noise levels that are being discussed in the EIR will be extremely obtrusive, particularly during construction, with pile driving, construction noise.

"The pile driving is supposed to restricted, according to the sponsor, to the hours of 8:00 a.m. to 6:00 p.m., but there is no mention of weekends. I'd like some assurances as to whether there is going to be any pile driving done on weekends. I would certainly like that to be disallowed." (Roy Mollard - Hearing)

"Pages 129 to 131 of the EIR note noise levels of 105 dbA [sic] at 50 feet from a pile driver, and indicate noise levels inside Pier 39 buildings of 71-75 dbA [sic], which 'require people to . . . shout to communicate.' There is no indication of the noise level relative to boats in the Marina. Will I be able to relax inside my boat? Will I be able to use the outside decks of my boat at all? The EIR states the project sponsor agrees to limit the pile driving hours to 8:00 a.m. thru 6:00 p.m., but does not restrict the days of operation. This implies that for 9 months I can expect my weekends to be disrupted by pile driving." (Roy Mollard)

RESPONSE

Users of the marina are noise-sensitive receptors, as are local residents at the North Point Apartments and the patrons and employees of shops, restaurants and offices on Pier 39. Due to the lack of shielding, the marina would be impacted by pile driving and other construction-related activities to a greater degree than other uses. As noted in the response above, pile driving would occur intermittently over a period of seven to nine weeks. The full extent of noise generated by pile driving, 105 dBA at 50 feet, would be experienced by outdoor users of the marina. Inside boats 50 feet from the pile driving activity, noise levels would be approximately 75 to 90 dBA with windows/doors open and from about 71 to 75 dBA with windows/doors closed. The noise of pile drivers, in particular, would stand out over the background noise level in the marina which is currently dominated by traffic noise. This level of noise would be disturbing to individuals and would be high enough to interfere with conversation between people and telephone conversation. Noise levels would be high enough to interfere with listening to the radio, watching television and would interfere with sleep.

The noise generation estimates documented in the Draft EIR are considered to be peak estimates of pile driving and other construction-related noise generation. Mitigation measures have been proposed to be implemented as part of the project which would decrease noise levels generated by construction equipment. Those measures would act to decrease impacts of construction noise on users of the Pier 39 marina.

As noted on page 128 of the EIR, construction noise is regulated by the San Francisco Noise Ordinance (Article 29 of the City Police Code). Section 2908 of the Ordinance prohibits construction work at night (from 8:00 PM to 7:00 AM) if noise would exceed the ambient noise level of five dBA at the project property line. The Ordinance does not prohibit construction work from taking place on weekends.

Page 129, the following is added after the last paragraph:

> "The marina is the closest noise-sensitive use. Due to the lack of shielding, the marina would be impacted by pile driving and other construction-related activities to a greater degree than other uses. The full extent of peak noise generated by unmitigated pile driving, about 110 dBA at 25 feet and 105 dBA at 50 feet, would be experienced by outdoor users of the marina. Inside boats 50 feet from the pile

driving activity, noise levels would be approximately 80 to 90 dBA with windows/doors open and from about 70 to 75 dBA with windows/doors closed. The noise of pile drivers, in particular, would stand out over the background noise level in the marina which is currently dominated by traffic noise. This level of noise would be disturbing to individuals and would be high enough to interfere with conversation between people and by telephone. Noise levels would be high enough to interfere with concentration, radio listening, watching television and would interfere with sleep."

Page 130, the first sentence is revised to read as follows (revisions are underlined):

"The next nearest noise-sensitive uses are the shops, restaurants, and offices on Pier 39 itself."

COMMENT

"My earlier comments on page 14 dealing with water circulation is expanded to include noise issues. Please discuss the noise impacts of these operations, siting alternatives that would not impact the marina or public access areas." (Sue C. Hestor)

"With further respect to noise, the draft EIR fails to address the impact of increased and continuing noise inflicted upon the Marina slip owners and tenants, arising or emanating from the operating pumps, blowers, and vents of the aquarium. Marina slip owners and tenants frequently and regularly occupy their condominium boat slips for consecutive periods of two or three days and/or nights. The rights of the Marina slip owners and tenants to use and enjoy their boat slips in the east basin of the Marina will be impacted by the noise created by the continual and/or periodic operation of the circulating pumps, air-exchange blowers and/or vent systems which would serve the aquarium. Such noise will particularly impact the Marina occupants during the night hours when the Marina slip owners and tenants have a right to peace and quiet." (Robert W. Pickard)

"A large part of the attraction of Pier 39 is the ability to sit out in the Summer and Fall evenings and enjoy the surroundings. The equipment for the proposed Aquarium has to work 24 hours a day, at a noise level in excess of 60 dbA [sic]. On top of that, the moving walkways are expected to be in operation from early morning through to

midnight, adding to the evening noise. The effect on the Marina is not considered in the EIR. Clearly it will make the Marina less desirable as a place to relax, with a consequent reduction in the perceived value of the property." (Roy S. Mollard)

"Finally, I'd like to mention that I have serious concerns about the discharge of water from the filters into the marina. The numbers that show up in the EIR indicate as much as 1,000 gallons a minute being dumped into the water from backwashing the filters. A thousand gallons of water a minute is going to create an awful lot of noise." (Roy Mollard - Hearing)

RESPONSE

A discussion of potential effects of operational noise was included in the Final Initial Study prepared for the proposed project. That document was published on January 29, 1988 and was included in the Draft EIR as Appendix A. The conclusion of that report was that "the project engineer and architect would be required to include design features in the building to limit mechanical equipment noise levels to 60 dBA to meet the nighttime limit." Further, the Initial Study states that "The project would be required to comply with the San Francisco Noise Ordinance, San Francisco Police Code Section 2909, 'Fixed Source Noise Levels,' which regulates mechanical equipment noise." The Initial Study concludes that there would be no significant environmental impacts from operation noise. There have been no changes in the proposed project design to suggest any changes to that conclusion.

As was discussed earlier (see response to comment on page C&R-201 of this document), the filter backwash water would not be discharged to the Bay but, rather, to the City sewer system. The blowdown water would be discharged to the Bay on a continuous basis at a rate ranging from 50 gpm to 270 gpm. These flow levels would be below the surface of the water and would not produce noticeable noise levels.

Based on the City's Noise Ordinance, maximum noise levels from operational equipment could be 70 dBA between 7:00 AM and 10:00 PM, and 60 dBA between 10:00 PM and 7:00 AM. These levels are equal to or less than the reported day-night average noise level along the Embarcadero.

I. ALTERNATIVES

COMMENT

"p. 161: The wrong MUNI lines are listed in the third paragraph. Should be 32, 19, 39, 15 and 42 (not 30)." (Irene Nishimura)

RESPONSE

To correct this error and to reflect MUNI's October 1988 service changes, page 161, second full paragraph, the fifth sentence is revised to read as follows (revisions are underlined):

"This includes eight bus routes either terminating in or passing through the Northern Waterfront area with four providing access to Pier 39 (32, 15, 42, and 39)."

COMMENT

"Additional Bay Fill. In order to make the necessary findings to approve fill in the Bay, the Commission must determine there is no alternative upland location for the project. The DEIR discusses one upland alternative of constructing the project at a nearby site bounded by Bay and Kearny Streets and the Embarcadero. The document points out few adverse environmental impacts from an upland location, stating the project sponsor has rejected the alternative location primarily because of separation of the facility from Pier 39. The sponsor's rejection of a separated alternative, of course, is not sufficient reason to avoid a full analysis of upland alternatives. The DEIR also analyzes the alternative of building the entire project within the existing Pier 39 structure. This information will be helpful in the Commission's considerations." (Joan L. Lundstrom, BCDC)

"The McAteer/Petris Act permits bay fill only in the event that there is no alternative upland location. The project sponsor rejects a non-waterfront location because. . . 'it does not meet the objectives of the project sponsor as outlined in Chapter II of [the DEIR] and because problems associated with the transportation of ocean water needed for the project would make a non-waterfront location unfeasible.' We fail to see how a non-waterfront location prevents the attainment of any of the objectives identified by the project sponsor. If there are reasons why an aquarium

located across the street would fail to educate, enhance the nautical identity of the Wharf, provide a reasonable economic return, etc., those reasons are not specified in the DEIR. Businesses on both sides of the Embarcadero flourish in the Wharf area. It is unclear why a bayfront site would provide for more effective education when the aquarium is in an enclosed structure. Nor is it clear that a bayfront site is necessary for transportation of bay water to the facility. Steinhart Aquarium is located miles from any marine water source yet obviously overcomes this much greater problem of remoteness." (Marc Holmes)

"It seems that the project sponsors have rejected alternatives that they see as undesirable away from Pier 39 because of isolation.

"I am getting the feeling that, at least my vision of what is proposed would make this aquarium an attraction that perhaps could stand alone and could stand in another location besides Pier 39 without causing the negative impacts that people are thinking that it will on the pier.

"I would like some expansion of some other ideas or other alternatives or other areas within the city where perhaps this could be used as an anchor tenant to maybe upgrade another area. I don't know whether the EIR is an appropriate place to do that or not. But I am not getting the feeling that much real consideration has been given to other locations." (Robert Dick - Hearing)

RESPONSE

An alternatives analysis is a required part of an EIR. The purpose of presenting alternatives in an EIR is to explore how different approaches to carrying out a project could reduce the significant environmental impacts of a project, and to disclose other approaches which may have been considered by the project sponsor. In order to be useful to decision makers, the alternatives need to be "reasonable." However, the EIR does not have to show that the alternatives would, or could, be carried out by the project sponsor, or that they would, or could, be approved by any necessary public agency. It may include alternative configurations that the sponsor does not propose to build or, under some circumstances, alternative locations which are not under the control of the sponsor. The

EIR must show what environmental advantages or disadvantages could result from these different approaches.

This EIR contains analyses of four alternatives. Each was chosen to explore ways of avoiding the impacts of most concern. "Alternative One: No Project" would avoid all impacts.

"Alternative Two: Different Location" was intended to explore the siting of an aquarium on another San Francisco waterfront location under the control of the Port of San Francisco. Two variants were explored. The first variant, to the west of Pier 35, is within the project sponsor's leasehold, and was the sponsor's initial design. It would involve constructing an aquarium associated with Pier 39 without enlarging the bulk of the current Pier 39 structures or displacing existing uses within the existing building or the marina. It would displace a planned open space. The second variant, at Pier 30-32, is not within the project sponsor's leasehold. It was included because an aquarium at this location would not result in new traffic in the Northern Waterfront. Because loading and cumulative transportation impacts of the project in the context of the Northern Waterfront were the only impacts which the Draft EIR recommended that the Commission find to be "significant," this variant is intended to illustrate how these impacts could be avoided, while still carrying out the project on the San Francisco waterfront.

"Alternative Three: Entire Project on Pier 39" was intended to show how the project would be configured if it was built without extending the existing pier, or increasing the intensity of development at the Pier, since it would result in a corresponding decrease in other uses. It would not result in changes to the Marina, and would lessen any impacts resulting from increased building bulk on the site, and from Bay fill.

"Alternative Four: Non-Waterfront Location" was included to show an alternative without any of the impacts associated with Bay fill. This alternative would also reduce the visual impacts of construction on the waterfront. It was also intended to assist BCDC in its evaluation of the necessity of Bay fill for this project, and to explore any environmental implications of a non-waterfront location. It was not intended to serve as an analysis of <u>all</u> possible alternative upland locations. It is not expected (by the Department of City

Planning or by the BCDC staff) that the analysis of this alternative will give BCDC all of the information that it needs to make its findings on this subject.

The "reasons for rejection" which are described in the EIR are those reasons given by the project sponsor for his rejection of the alternative. They are not purported to be the conclusions of the report authors and should not be read as conclusions of the EIR. They are included in the EIR in order to provide the City Planning Commission and the public with information pertaining to the sponsor's reasons for pursuing the proposed project, as opposed to any one of the alternatives analyzed in the EIR.

If the City Planning Commission were to approve the project, or any of the Alternatives, the reasons for rejecting Alternatives which would reduce significant environmental impacts of the approved project would be included in the findings of the Commission approval motion and in any necessary supporting documentation.

However, to provide further elaboration on the sponsor's reason for rejecting Alternative Four, the sponsor believes that an essential element of the aquarium's educational program would be diminished by physical separation from the Bay. The educational program would include a number of types of experiences which would take place outside of the aquarium facility, including boat trips on the Bay. Educators from the aquarium would be expected to to use the Pier 39 open space (perimeter road) to show school children examples of Bay ecosystems. An example of the relationship between a marine educational exhibit and the ocean is at the Monterey Bay Aquarium which is located on Monterey Bay and includes outdoor Bay-viewing experiences. The sponsor believes that the ability of the aquarium to introduce participants in the facility's educational programs to natural Bay functions would be hindered by physical separation from the Bay.

The sponsor also believes that location of the aquarium outside of the Fisherman's Wharf area would decrease the aquarium's economic viability. He believes that separation from the traditional Fisherman's Wharf area would make pedestrian access by other visitors to the Wharf difficult, reducing potential patronage and adversely affect the profitability of the aquarium, as well as increasing potential traffic generation of the aquarium. Finally, the sponsor believes that, while transport of sea water to a non-waterfront location would

be feasible, the cost and disruption necessary to run intake and outflow pipes under the Embarcadero make a non-waterfront location undesirable.

The decision-makers will consider the sponsor's reasons for rejection of the alternatives. The decision-makers may agree or disagree with these reasons. While the Planning Commission and the BCDC may include these reasons with their own in findings made to reject an alternative, the EIR does not mandate either that alternatives be rejected, or that the sponsor's reasons be included in any findings rejecting alternatives. Both commissions will make their decisions based on the information contained in the Final EIR and on other relevant information in the record and presented at public hearings.

COMMENT

"Page 152, Alternatives - I don't see anything under the alternatives which discusses the alternative location of Pier 45, a land fill pier, which in conjunction with the fishing industry, has been discussed amongst the City Advisory Committee and the Coastal Conservancy to be a good potential site for a Fisheries Institute. Said Fisheries Institute could consist of an educational program about the fishing industry and related fish species in the waters in and around Northern California, the Bay Area, and the California Coast. Part of the Fisheries Institute could include an educational aquarium, not an 'E-Ride' as proposed by Pier 39." (Peter C. Brown)

RESPONSE

The California Coastal Conservancy is investigating opportunities for the establishment of a Fisheries Center at Pier 45. The Conservancy has proposed several alternative approaches for further analysis. These alternatives range from about 25,000 square feet to about 60,000 square feet, and consist of combinations of uses which the Conservancy staff believes might be feasible in terms of available space, environmental considerations, and potential financing mechanisms. Some of these alternatives include an "Ocean and Bay Center" of up to 20,000 square feet. The Ocean and Bay Center is described as a public interpretive center with exhibits describing aspects of the fishing industry in the Bay and Northern California. It might include some tanks with live aquatic specimens, such as tide pool exhibits or touch-tanks, as part of larger non-water interpretive exhibits. Because of the constraints of space on Pier 45 given the Conservancy's primary

commitment to uses which will directly benefit the fishing industry, likely available financing, and other concerns, the Conservancy staff has not included an "aquarium" in any of the six alternative approaches. See page C&R 45 for further discussion of the Coastal Conservancy's study for a Fisheries Center at Pier 45.

The Fisherman's Wharf Seafood Center and the Fisheries Center proposed for Pier 45 have not been approved. It is possible that they will not proceed as currently envisioned, and that portions of Pier 45 could become available for other uses, such as an aquarium. Pier 45 was not included as an alternative in this EIR, because an aquarium at this location would not avoid any of the potentially significant impacts identified in the Draft EIR more effectively than the alternatives which were presented. A Pier 45 location would contribute to the area's cumulative traffic impact, to a similar extent as the proposed site.

Pier 45 is not an entirely "landfill" pier. The central portion of the pier is solid fill. The east and west edges are pile-supported, and any restructuring of these edges (as would probably be necessary to support aquarium tanks) would be considered "fill" by BCDC. The central portion of Pier 45, where there is the most flexibility for introducing new uses, is currently being reserved by the Port for facilities serving the fishing industry. See pages C&R-220-223 for further discussion of the EIR's analysis of alternatives.

COMMENT

> "The one other alternative that might be found acceptable, would be 'Alternative #3, Entire Project on Existing Pier 39.' If, in fact, they were demolishing 40,000 square feet of existing retail use and replacing it with 40,000 square feet of aquarium, at least the impact on view corridors, bay fill, the berthing/marina facilities and the open space issues might be mitigated." (Peter C. Brown)

RESPONSE

The comments are noted.

COMMENT

"Let me just say quickly about the alternatives. I don't think they're really alternatives. The Alternative 2, I think one of the two suggestions isn't available. Somebody else has a long-term lease on it, so I didn't understand why that alternative is being considered." (Sue Bierman - Hearing)

RESPONSE

Alternative 2 is intended to explore the siting of an aquarium on another San Francisco waterfront site. Alternative 2, Variant 1, the Pier 37 site (now referred to as Pier 35 West) was originally proposed by the project sponsor. Although that site was dismissed early in the project design process, it is presented in the EIR in order to fully document the comparative environmental effects of the project at that site. The CEQA Guidelines state that the EIR should include alternatives "which were rejected in favor of the proposal if they were considered in developing the proposal" (Section 15126(d)(1)). Alternative 2, Variant 1 is within the sponsor's leasehold.

The only significant environmental impacts identified in the EIR are cumulative transportation impacts. Alternative 2, Variant 2 (Pier 30-32) was included (in consultation with Port staff) in order to analyze a waterfront location away from Fisherman's Wharf and its transportation issues. There is no long-term lease held for Piers 30-32. Piers 30-32, or 34, just south of the Bay Bridge, might be considered appropriate for this type of use because of their vacancy, accessibility and potential for commercial recreation under the BCDC planning guidelines.

The fact that alternative locations are not under the control of the project sponsor is not necessarily a reason to forego analysis of alternative locations for a project, depending on specific circumstances. In this case, the Port is involved in the proposed project and does control the alternative sites. See pages C&R-220-223 for more discussion of EIR alternatives analysis.

COMMENT

"Also, in the no-project alternative, I would like you to talk about the advantages or at least how many kids come on a weekend and in the summer and how much use this arcade gets." (Sue Bierman - Hearing)

RESPONSE

As was discussed earlier in this document, very little of the amusement area in the existing Pier 39 complex would be removed with the proposed project. The area which would be removed previously housed a "bumper cars" ride and for several years has contained the "Mindscaper" simulation ride. The existing video game area, the San Francisco Experience theater and all other aspects of the amusement area would be left unchanged.

The Pier 39 management does not collect any information on the number of young people attending the amusement facility.

COMMENT

"9. The draft EIR fails to adequately address the sponsor's claim that all available merchant space is presently leased or unavailable. This statement is not necessarily true. The EIR should document what space is or is not available in the existing shopping center complex for development of the proposed project, and should further address the benefit of using the total space wherein the present Pier 39 arcade is located. A portion of the proposed structure would consume parts of the existing arcade facility. The EIR fails to consider the beneficial impact of reduction of disturbances and crime which might develop if the entire arcade area was utilized for the aquarium site as one of the alternative proposals suggests. We understand that in addition to increased litter, that fights, assaults and property damage have occurred in the areas near the arcade. These could be largely eliminated if the arcade were eliminated." (Robert W. Pickard)

RESPONSE

According to the project sponsor, 98% of all available space at Pier 39 is currently leased. Occupancy normally ranges from 95% to 98%. The Northern Waterfront Findings Report shows 6,000 square feet vacant in Pier 39 (Figure 4-8), 3% of total. See pages C&R-220-223 for a discussion of the EIR alternatives analysis and of reasons for rejecting alternatives.

COMMENT

"B. Alternative Two, Variant One

"The location should be described as 'Pier 35 west' or 'west side of Pier 35' since there is no 'Pier 37' anymore. A 'vicinity map' insert on Figure 35 would be helpful to show the overall location and give a better orientation to the reader. Several items in the project description should be explained for this alternative: 1) Why would the entryway be 58 feet high when the project on Pier 39 can be kept to 40?; 2) Why would it require 200 piles when the project on Pier 39 only requires 114? and, 3) Why would it extend 250 feet along the Embarcadero instead of 160 (or less) as with the Pier 39 location? These unexplained 'assumptions' lead the reader to assume that this alternative has been 'set up' to be worse than the project." (Richard J. Wiederhorn)

RESPONSE

It is acknowledged that the location of alternative project described in Alternative Two: Variant One is closer to Pier 35 than the original Pier 37 footing.

Page 153, second paragraph under B. ALTERNATIVE TWO: DIFFERENT LOCATION ALTERNATIVES, the title is revised to read as follows (revisions are underlined):

"Variant One: Pier 35 West"

Page 153, second full paragraph under B. ALTERNATIVE TWO: DIFFERENT LOCATION ALTERNATIVES, the first sentence is revised to read as follows (revisions are underlined):

"This variant of Alternative Two would involve the location of the proposed project immediately west of Pier 35 and east of Pier 39 (see Figure 35, page 154)."

Figure 1, page 11, consists of a series of maps at different scales to provide the reader with an orientation of the project to the entire Fisherman's Wharf/Northern Waterfront area. These maps provide the same orientation for Alternative Two: Variant One.

The first partial paragraph on page 155 of the DEIR explains that the intent of the facade for this alternative would be to make the structure similar in design to "other pier entries on the Embarcadero with bold concrete facings and an arched entryway with a peaked

roof . . ." This design motif was part of the project as originally proposed due to the proximity of this alternative site to the existing Pier 35 structure. The design of the project as currently proposed would differ from traditional pier facades, but would be consistent with the design motif of the Pier 39 complex which is generally low in scale with multi-faceted sloped roofs.

Page 155, paragraph two, explains that there would be a need for a total of 28,000 square feet of new pier area for this Alternative, compared with a total of 19,400 square feet for the proposed project. This additional pier square footage would require a total of 200 piles, compared with the 114 piles required for the proposed project.

Whereas the proposed project would extend out onto the Pier 39 structure, an alternative project constructed on new piers would place a premium on limiting the extension of the new structure into the Bay. This would require a longer facade along the waterfront, rather than a deeper extension into the Bay.

COMMENT

"Alternative Two, Variant Two

"Removing old pilings seems an unnecessary impact. Furthermore, the land use discussion for the North China Basin Area is vague and reaches no conclusions about this alternative. The transportation impact section seems to reach some questionable conclusions, e.g., that auto use would be greater and that visitors would not use transit as much, although the Metro is extended directly in front of the site, because 'basic public transit does not add to the tourist experience'." (Richard J. Wiederhorn)

RESPONSE

It is likely that existing piles on Piers 30-32 would have to be removed and replaced to allow for the construction of the the alternative. The existing piles were not designed to accommodate the loads which would be exerted by the proposed aquarium. Any project requiring restructuring of a pile-supported structure is considered "bayfill" by BCDC.

In order to provide more information about traffic conditions in the area, the following is added to page 160 of the EIR:

> "Existing weekday PM peak hour levels of service along the Embarcadero at the intersections closest to Pier 30-32 are generally in the LOS 'A' to 'B' range. Future levels of service at these intersections (approximately 20 years following the completion of The Embarcadero roadway improvements) are projected to be LOS D. The project would add significant numbers of vehicle trips during the weekday PM peak hour to the most underused intersection approaches (to and from the Bay side of The Embarcadero), with the result that project traffic could create level of service 'E' or 'F' during the weekday PM peak hour. On weekends levels of service with the project would be significantly better (e.g. LOS 'C')."

There are several reasons for the assumption that auto use would be greater for a project outside of the Fisherman's Wharf area and located at Piers 30-32. First, there would be a much greater vehicle trip generation rate from the alternative than the proposed project due to the lack of linked trips. "Linked" trips in the context of the project's vehicle trip generation refer to trips which would come directly from the traffic stream already at study area intersections. For example, many people who visit other Fisherman's Wharf attractions might also visit an Underwater World at Pier 39. These patrons would represent "linked" trips since they would come to the Northern Waterfront regardless of whether Underwater World was open. There are no existing attractions at or near Pier 30-32 to attract significant numbers of visitors, with the result that a Pier 30-32 location for the project would attract mostly "new" trips which would not otherwise be on the adjacent streets. For the proposed project, it is assumed that approximately 80% of the patrons of the aquarium would be visiting the Fisherman's Wharf area even if the aquarium were not built and that, for those patrons, the trip to the proposed aquarium would be another stop in their visit to Fisherman's Wharf. Secondly, it is assumed that the limited amount of transit service to the North China Basin area, in comparison to that for the Northern Waterfront area, would result in a decrease in the proportion of patrons travelling to the aquarium by transit, and a similar increase in the proportion arriving by automobile. Finally, it is assumed that a greater number of tourists would travel to the Fisherman's Wharf area by transit than would travel to the Pier 30-32 site due to the "tourist" orientation of transit opportunities to Fisherman's Wharf, such as the cable cars and the historic trolleys. It is not likely that standard MUNI busses or MUNI Metro would be as attractive to tourists as these other transit modes.

The planned future extension of MUNI Metro along The Embarcadero would increase transit choices for visitors to a Pier 30-32 site. However, fewer tourists would be attracted to MUNI bus lines or to a future extension of MUNI Metro than would be attracted to cable cars or a historic streetcar at a Pier 39 location. Cable cars are clearly part of the tourist experience. The same cannot be said for MUNI buses or MUNI Metro. The availability of weekend parking would be a further inducement for visitors to a Pier 30-32 site to drive.

COMMENT

"C. Alternative Three

"Please clarify why the old piles have to be removed. This is the basis for concluding there would be worse noise and water quality impacts for this alternative." (Richard J. Wiederhorn)

RESPONSE

It has been the conclusion of the project structural engineers that the existing piles supporting Pier 39, and all other finger piers along the Northern Waterfront, would not have the structural integrity to support the loading forces which would be exerted by the proposed aquarium. Construction of the proposed project on any finger pier (one supported by concrete or wooden piles) would require replacement of existing piles to provide adequate structural support for the aquarium.

COMMENT

"D. Alternative Four

"Pilings could be required to be driven on this inland site as well. Please clarify why the removal of the gas station and the car wash is considered land use impacts when these uses would be removed with any development of the site. The tenant is only on a month-to-month license and the Port has anticipated development of this site for many years. It is incorrect to say the BCDC would have any jurisdiction on this site; it would not." (Richard J. Wiederhorn)

RESPONSE

The comments are noted. Any change of use resulting from a project or alternative is described as a land use impact. Clearly, such impacts could also occur without this project, if another proposal for this site were to be approved.

Page 167, the third paragraph is replaced with the following:

> "Impacts relating to land use would be greater than those associated with the proposed project since this alternative would fully displace an existing use. That use, the Chevron gas station, a parking lot for approximately 20 cars and an automatic car wash, would be removed, decreasing the availability of service stations in the Fisherman's Wharf area and diminishing the overall parking supply in the vicinity. This use is currently operating on a month-to-month license. This alternative project site would continue to be within the jurisdiction of the Port of San Francisco. It would not be within the jurisdiction of the Bay Conservation and Development Commission (BCDC)."

J. OTHER ISSUES

Status of Existing Permits and Leases

COMMENT

"I personally feel that this project is chipping away at our marina. Pier 39 has already begun construction without permits in another portion of the marina.

"The construction was on J Dock. They removed four slips. It was not permitted by BCDC or by the Port Commission. They removed four docks to construct a single dock for a 110-foot vessel which is going to be used for commercial purposes. Which is also a violation of the lease." (Bob Pickard - Hearing)

RESPONSE

The commentor is referring to the lease between the sponsor's predecessor-in-interest North Point Center, Inc., as tenant, and the City and County of San Francisco, operating through the Port Commission, as landlord. Although the basis of the lease violation was not stated, the commentor may have been alluding to the Lease requirement that Tenant give Landlord at least six months prior written notice if Tenant intends to change any one or more of the general types of uses initially constructed on the premises to a substantially different type of use, or the requirement that improvements erected on the premises shall not be demolished without the prior written approval of the Landlord. Subsection VI.B of the First Amendment of Lease provides a list of authorized uses, which includes a marina for berthing and slip rental for pleasure craft and yachts, party and charter boats, but specifically excluding any tour boat or ferry boat. The project sponsor does not believe that he was required to request the prior approval of the Port Commission for the removal of the slips from J-dock on the basis of any change of use because the substituted use was a permitted use under the lease.

The project sponsor is currently remedying any possible lease violation in connection with the J-dock slips by restoring the four removed slips to their original condition. The party boat which the project sponsor had intended to berth at that location will be moved elsewhere pending the outcome of current discussions on this matter between Pier 39 Limited Partnership, the Port and BCDC.

COMMENT

"[The Planning Commission's Resolution for Conditional Use Authorization] states the parking garage will have a maximum capacity sufficient to cover the following: 850 spaces for the North Point Marina and 150 spaces for Harbor Tours. That's a 1000 car garage and as previously stated in the EIR, they have only built a 916 car garage. The fact is, they built less garage capacity than was allowed for the initial development, which has proven to be less than adequate to support existing uses, and now they are suggesting to add more destination retail to the Pier which will add an additional parking need, which they are not about to satisfactorily ameliorate with weekend only spaces at 80 Francisco." (Peter C. Brown)

"The sponsor proposes to modify the Pier 39 garage to provide a second entrance. I call your attention to Appendix E of the EIR, which is the Department of Planning's original authorization of the Pier 39 development. Exhibit C of that resolution, which is attached, requires that two entrances be in garage, one on Beach Street and one on Powell Street, and that one separate exit exists on Stockton Street.

"Why hasn't this requirement been enforced? The gridlock which has plagued the area for ten years has been caused by the garages' inability to accommodate the existing traffic that stacks up. This issue should be resolved independent of the outcome of this review." (Christopher Martin - Hearing)

"Please do the same in detail for conditions which were placed on this project by the Planning Commission, giving special attention to the limitations and requirements on the parking garage and on open space. Was the recent restriping in conformity with those conditions? Are all of the exits/entrances mandated for the original project operating the way they were supposed to?" (Sue Hestor)

RESPONSE

City Planning Commission Resolution No. 7551 authorizing the Conditional Use of the North Point Park/Marina (the original name for the Pier 39 project) provides that "the Garage shall be designed in consultation with the Department of City Planning and the Traffic Engineering Division of the Department of Public Works in conformance with

standards described in 'Exhibit B'; and shall have vehicular access and egress only at those locations shown in 'Exhibit C.'"

Exhibit C, the Site Diagram of North Point Park/Marina, used arrow symbols which were defined in the Site Diagram legend as "Vehicular Access and Egress Locations," and it showed arrows at Beach, Powell and Stockton Streets, indicating that each of these streets could be used. The garage design does not violate the provisions that the garage "have vehicular access and egress only at those locations shown in Exhibit C" because the garage has access and egress only on Powell Street. Additional access or egress could occur at Beach and/or Stockton Streets.

San Francisco Planning Commission Resolution No. 8548 reaffirmed the site diagram for the North Point Park/Marina included as part of Resolution No. 7551, the original conditional use authorization for the North Point Park/Marina. Resolution 8548 restates that a new entrance and/or exit shall be made operational when a transit lane is established on The Embarcadero. An additional garage access point would not be required before such time that transit is extended along The Embarcadero. Because the extension of the MUNI F-Line along The Embarcadero is now a planned project, and an additional garage access point would be required to accommodate the F-Line under the garage's conditional use authorization, this EIR evaluates several potential configurations for additional garage access points.

A comment was made that the garage contains an insufficient number of parking spaces. Resolution No. 7551 provides for a required maximum of 1,000 parking spaces. No violation of the Conditional Use authorization is evident.

One comment questioned whether the recent restriping of the garage was in conformance with the Conditional Use authorization. Resolution No. 7551 and the Exhibits to it do not discuss the issue of garage restriping. Paragraph 3 of Resolution No. 7551 only establishes a maximum capacity. The restriping of the garage did not result in the creation of parking spaces in excess of the maximum number of spaces permitted under the original Conditional Use authorization.

COMMENT

"Similarly, I am very concerned that you do not have any information of any consequence on the magnitude of the current BCDC [open space] violations, and, I believe, current violations of the Planning Commission approval in 1976.

"I will give your staff a stack of BCDC material that I have. I just don't have it with me. I will give it to them first thing in the morning. There is a cease and desist order that made the papers a couple days ago. They did not construct the park that is over here somewhere, towards the southern end of the property. There was supposed to be an eastern end of the property, I guess. There was supposed to be a park. It was a condition that was put on 12 years ago. The park isn't there. It's in violation of both BCDC conditions as well as this Commission's conditions.

"It is important to know how they have measured up to the standards that were expected of them 12 years ago to know if we can expect that they will meet any standards imposed on them in 1988 -- Planning Commission standards, BCDC. And you really need a BCDC report in this EIR." (Sue Hestor - Hearing)

"THD requests that the developer not be permitted to pursue this project until completing the park and open space improvements to the east of the pier, a requirement of the original Pier 39 approvals." (Telegraph Hill Dwellers)

"Page 29 - The issue of the open space violations has totally been skirted over. BCDC issued a cease and desist order recently penalizing Pier 39 for its continuing, flagrant failure to develop required open space east of Pier 39. They have also started proceedings for other violations of water front access that were imposed 12 years ago -- posting of appropriate access signs, using pedestrian walks for parking, etc.

"I am supplying your staff with a set of BCDC papers showing the continued violations and lack of good faith compliance with conditions placed on this project. Please provide a full description of those problems so that the public can judge the likelihood of future compliance by this developer." (Sue C. Hestor)

RESPONSE

The original Conditional Use authorization and related documents discuss the requirement for a public walkway around the entire perimeter of Pier 39, Resolution No. 7551. Section "E" of the Design Standards, which were incorporated by Resolution No. 7551, contained a discussion of pedestrian circulation areas. This section provided that the perimeter of Pier 39 should allow pedestrian access and provide places for public fishing. Such use already occurs and there is no violation. There are no other references to the requirement for public access on the perimeter of Pier 39 in other resolutions passed by the City Planning Commission in connection with the Pier 39 project.

Several commenters stated that the Pier 39 project sponsor violated the original Conditional Use authorization by failing to construct the park on the eastern end of the Pier 39 project. The original Conditional Use authorization, as authorized by Resolution No. 7551, the Site Diagram of North Point Park/Marina, designated the area of the park. It did not include the easternmost area of the leasehold adjacent to Pier 35; that area was reserved for a service building. The park area to the west of Pier 39 was completed in conjunction with the initial construction of the Pier 39 project. The central park area and the park area to the east of Pier 39 were completed shortly thereafter.

Paragraph 8 of Resolution No. 7551 required the Pier 39 project sponsor to post a legally binding bond sufficient to cover the costs of the park. Posting of this bond was required prior to the approval of any building permits for the project. This bond was released by the City after the project sponsor completed the park required by Resolution 7551.

In 1980, the City Planning Commission passed Resolution No. 8548 which, among other things, authorized the relocation of the previously approved service building from the east of the park to the eastern end of the garage. In 1983, by Motion No. 9637M, the City Planning Commission approved an amendment of the Conditional Use authorization which included expansion of the park to include the area previously authorized as a service building in connection with approval of a new breakwater. No time limit was imposed for completion of this park area. According to the project sponsor, this park area will be completed within the next few years.

The entire park required by the original Conditional Use authorization was built. Subsequently, the project sponsor was required to add to the park area when the City authorized the relocation of the service yard. The project sponsor has never received notification from the City of any violation of the Conditional Use authorization.

BCDC Permit No. 22-76, issued on June 10, 1977, required the creation of a public park of approximately 4.3 acres along the San Francisco Embarcadero in front of Piers 37 through 41. Permit 22-76 required a number of public access areas including: 1) the 57,600 square foot accessway around the perimeter of the pier (the permit requires the accessway to be open to the public except for the hours between 2:30 a.m. and 11:30 a.m. when Pier 39 may close off the accessway to the public for service vehicles); 2) the 1,500 lineal foot shoreline in front of Piers 37, 39 and 41, known as Waterfront Park; 3) a 40,000 square foot area, known as East Wharf Park near Pier 35; and 4) 10,000 square feet on top of the western breakwater. Construction of a majority of this park was completed by the early 1980s.

The portion of the park at the far eastern end adjacent to Pier 35, which BCDC calls the Pier 39 East Wharf Area, was the subject of special condition II-C-2 to Amendment No. 11, issued on December 18, 1984. This Amendment required the completion of the East Wharf Area by August 1, 1985. Amendment No. 12, issued on August 20, 1985, extended the time for completion of the East Wharf Area improvements to August 1, 1986.

The East Wharf Area improvements were not completed by that date. The Pier 39 Limited Partnership and the Port discovered in 1985 or 1986 that wave action and salt water corrosion had seriously damaged the seawall and the concrete and steel underpinnings that support the wooden deck on which some of the improvements for the East Wharf Area would be located. It was estimated that substantial repairs costing approximately $900,000 would be required and neither the Port nor the project sponsor had anticipated repairs of such magnitude at the time when they agreed to make the improvements. Neither believed that BCDC expected such repairs either. A dispute arose between the Port and the Pier 39 Limited Partnership regarding their respective responsibilities under the Lease for making the necessary repairs and the allocation of the costs between the parties. The Pier 39 Limited Partnership continued to use the East

Wharf Area as a staging and storage yard for materials used in other required building and maintenance projects.

The Pier 39 Limited Partnership, the Port, and BCDC have now reached a stipulated resolution of the East Wharf Area improvement issue. The resolution is contained in BCDC Commission Order CCD 3-88, effective as of September 15, 1988. Under the terms of this order, the Pier 39 Limited Partnership and the Port will be required to complete the East Wharf Area improvements in two phases, the first of which must be completed by August 1, 1990, and the second of which must be completed by August 1, 1992.

COMMENT

"(2) BCDC enforcement files

"BCDC has had several enforcement actions against Pier 39 for failure to comply with requirements imposed on the project in 1976. Pier 39's failure to comply with previously imposed conditions needs to be explained and analyzed in this EIR. Without information on their past efforts, it is impossible to project how successful the public will be in getting Pier 39 to actually meet conditions they may agree to get this aquarium approved. I am attaching the following documents which were obtained from BCDC files. They cover the following issues: Pier 39's failure to comply with conditions requiring construction of a park east of their marina and penalties for failure to comply, illegal parking on public sidewalk surrounding Pier 39, inadequate posting of public access signs, failure to provide access for swimmers, mooring of illegal commercial vessels, illegal use of public park for rental operations of motorized cable car, among other issues." (Sue C. Hestor)

"Finally, public access will be required by BCDC as a part of this project proposal. Pier 39 and BCDC are currently in the process of discussing a solution to public access problems related to the Pier 39 operation. There is dispute over what areas should be reserved exclusively for use by the public. There is potential conflict between the access proposal associated with the Underwater World project and that of the yet-to-be-resolved solution for the Pier 39 complex. The access plan proposed by Underwater World may not be allowable following resolution of the current dispute." (Marc Holmes)

"Page 71 - this is one of the places where serious discussion of the BCDC enforcement actions needs to be included." (Sue C. Hestor)

RESPONSE

The most specific requirement concerning use of the perimeter of Pier 39 for a public access walkway was imposed by BCDC in Permit No. 22-76, Section "D," which addressed the issue of "public access" to the Pier 39 project, provided as follows:

> Prior to any construction authorized pursuant to this permit, the permittees shall, by instrument(s), including a drawing showing all public access areas with dimensions, convenient reference points and at scale, acceptable to counsel for BCDC, subject their interest to exclusive rights of public access for viewing, walking, sitting, and related non-vehicular, except for service vehicles, purposes in the area of approximately 57,600 square feet (.54 hectares) around the perimeter of Pier 39 and the fixed breakwater. Such public access areas shall be open, free of charge, to the public during all times of the day except during the hours of 2:30 a.m. and 11:30 a.m. when Pier 39 may be closed to public access and used for service vehicles. Such rights shall exist so long as any structure authorized herein is used by any party.

This BCDC condition established the area of, and requirements for, the public access walkway on the perimeter of Pier 39. Public access clearly must be provided from 11:30 a.m. to 2:30 a.m. each day. The project sponsor believes that the condition does not prohibit the use of the public walkway by service vehicles between 11:30 a.m. and 2:30 a.m. Rather, the sponsor believes that the condition permits the Pier 39 project staff to prohibit public access during the hours between 2:30 a.m. and 11:30 a.m. for the purpose of exclusive use by service vehicles. Service vehicles have been using this perimeter space.

BCDC staff disagree with this interpretation of the BCDC requirement for public access walkway on the perimeter of Pier 39, believing, rather, that service vehicles should be limited to the hours between 2:30 a.m. and 11:30 a.m. The Pier 39 Limited Partnership and BCDC are currently attempting to resolve this issue.

COMMENT

"3. The Draft EIR fails to address the impact on the east basin (East Marina) Marina slip owners and tenants with respect to the increased noise, litter, and the attendant

'gawking factor' by aquarium customers, caused by the proposed project's Marina-view deck." (Robert W. Pickard)

RESPONSE

For a discussion of construction and operational noise impacts at the Marina, see page C&R-214 and page C&R-216. Pier 39 currently attracts approximately 27,000 visitors on an average day. Most visitors to the project would be drawn from this number. The amount of litter resulting from the additional visitors attracted to the project would not be substantial. The term "gawking" has been used by the commenter to refer to the enjoyment of marine views by people using public access associated with the project and with Pier 39. This was not considered to be an adverse environmental impact.

COMMENT

"11. The Draft EIR fails to consider that the condominium-ized lease-hold estates of the Marina slip owners were granted for a period of 50 years (or that Pier 39's lease is for 66 years). Thus, the Draft EIR, in failing to address the existence of the Marina condominiums, also fails to address the issue that the aquarium project, as proposed, would take, change, and diminish the established Marina Common Area (in addition to the proposed taking of 16 existing slips, 15 of which are privately held). The Draft EIR fails to address or consider that the Marina slip owners have made a substantial investment in the San Francisco Northern Waterfront and the Marina at Pier 39. In failing to address these issues, the Draft EIR ignores the effort by the sponsors to violate the spirit and intent of the granted 50-year lease-hold estates, and in so doing, attempt to substantially change the nature and purpose of the Marina through intrusion, taking of recreation boat slips, blocking and shading of portions of the Marina, and diminishing the size and changing the shape of the Marina Common Area and the Marina." (Robert W. Pickard)

"My main interest in wanting to speak here is to bring focus on one thing, and that is the fact that there is a marina, there are marina condominiums down there, there are a number of people who are seriously concerned about what is going to happen here.

"As evidenced by the information in the agenda, Pier 39 is described as a retail restaurant facility. The EIR, this agenda, and the issue in general pretty much

ignores what we think are our serious concerns with this project." (Ken Geiser - Hearing)

"The draft EIR essentially treats the Marina as if it did not even exist. The draft EIR appears to treat the entire Marina as if its only import is to mention the taking of 16 slips from a designated recreational marina as a mere side issue. In so doing, the draft EIR fails to adequately address the reasonable alternatives to the aquarium's intrusion into the Marina and fails to adequately stress the benefits to the city of the sponsors locating either entirely on Pier 39 proper, or elsewhere." (Robert W. Pickard)

"P. 12: Somewhere should be a brief description of the 'dockominiums' that comprise most of the Pier 39 marina slips. Does this still make it a 'public marina?'" (Irene Nishimura, Port of San Francisco)

"I believe that Pier 39 holds a lease from the City of San Francisco. They then sublease to the Marina tenants. My lease specifically guarantees me that the configuration of the Marina cannot and will not be altered without the express approval of the tenants. I have not been asked for my approval. Is Pier 39 going to ignore this provision of the lease as they have ignored other provisions? Does the City of San Francisco condone the actions of the Pier 39 management in disregarding the terms of the lease?" (Roy S. Mollard)

"(1) The application for this project is not authorized by all of the property owners whose property will be used for the project.

"The EIR implies that Pier 39 Limited Partnership has the right to apply for a conditional use for this property. This is incorrect. The footprint of the proposed expansion includes approximately 16 boat slips in the marina east of Pier 39. That marina is a condominium with ownership rights in individual slips <u>and in the configuration of the entire marina</u> vested in many slip owners. To reconfigure the marina a majority of the slip owners must formally vote. Unless and until a vote occurs in which 50% of the owners concur, no application can be filed which includes

their property. In addition, Pier 39 has no right of eminent domain over the 16 slips. Many of those slips are in a private condo ownership.

"The Planning Code requires that all owners subscribe to an application for a conditional use or other permit. That is clearly not the case here. Private owners with legal property rights have not agreed to this application, and in fact oppose it.

"Without a legal application, there is no project which can be reviewed. This EIR should be aborted until their [sic] is a complete application subscribed by the owners of all of the rights in the proposed project area." (Sue C. Hestor)

RESPONSE

Recreational boat slips in the marina are subject to subleases generally having an initial duration of 50 years. Although a number of subleases have been sold for a fixed dollar amount, there has been no creation of condominiums. The proposed project would reduce the amount of water area in the marina and it would reduce the number of recreational boat slips, as indicated in the EIR, pages 70-72.

The Department of City Planning requested an opinion from the City Attorney on these issues. The opinion, dated January 30, 1989, is available in the project file. In summary, the City Attorney concluded as follows:

> Planning Code Section 303(b) of the Planning Code provides that only an owner, or authorized agent for the owner, of the property for which the conditional use is sought may initiate an application for conditional use authorization. The Court of Appeal has held that an 'owner' for purposes of this section is not limited to a strict definition of fee ownership, but may include a lessee in a tenancy for years. Whether a lessee is an 'owner' for purposes of filing a conditional use permit turns on whether the lessee owns the 'right to use the property in the manner requested in the application.' An aquarium use is not an authorized use under the current lease. Therefore, Pier 39 Limited Partnership is not an owner for purposes of filing a conditional use application for the Underwater World project.
>
> On October 22, 1980, the San Francisco Port Commission adopted Resolution No. 80-112 granting the Port Director the power to authorize the filing of permits. This resolution has never been rescinded. Pursuant to that grant of authority, the Executive Director for the Port, by letter dated October 27, 1987 to the Director of City Planning, specifically granted authorization to Pier 39 Limited Partnership to apply for a conditional use permit for the proposed aquarium project. Therefore, the

Pier 39 Limited Partnership may initiate an application for conditional use authorization because it has been specifically authorized to do so by the Port Commission.

Pier 39 Limited Partnership has subleased the boat slips in the Pier 39 marina for a 50-year period. The sublease between the Pier 39 Limited Partnership and the boat slip sublessees indicates that the sublessees have no right to use the marina other than to berth their boats. The sublease does not grant any rights to develop an aquarium on the property. Accordingly, these sublessees are not owners for purposes of the conditional use application. Obtaining their approval for filing of an application is not legally required.

The City Attorney did not address the question of whether the sublease between the Pier 39 Limited Partnership and the boat slip sublessees requires permission from the sublessees to reconfigure the marina. This is a private issue between these parties.

This EIR does not address the investment of the marina slip sublessees, nor does it address the investment of the Pier 39 Limited Partnership nor of the sublessees having stores and restaurants at Pier 39 because the EIR does not address investment or economic considerations. The contractual relationship between the project sponsor and the various sublessees are not an appropriate subject for discussion in the EIR. However, material has been added to the EIR in order to provide useful information for decision makers on the impact of the proposed project on shading of portions of the marina, blockage of views from slips or boats in the marina of the cityscape and other potential impacts on the marina.

Impacts on Steinhart Aquarium

COMMENT

"Steinhart is, to a large extent, dependent now on public contributions and taxpayer assistance. I would like to point out specifically that any business drawn away from that by this one is inevitably going to be paid for by the taxpayers of San Francisco." (Nan Roth - Hearing)

"I think one of the main flaws of the document is the ignoring of the Steinhart and what the effect would be. I think that ought to be dealt with." (Sue Bierman - Hearing)

"I think you need to factor in additionally the Steinhart study. And if the Steinhart study is going to be out in another week or so, could it be something we could comment on before the EIR process is over?" (Sue Hestor - Hearing)

"The EIR constantly refers to the aquarium as being a commercial recreation facility, which kind of bothers me, because it sounds like the bumper cars that it's replacing. It somehow lacks the same tenor that Steinhart Aquarium has in terms of its focus on education in trying to continually improve and bring before the public aspects of the sea world that they would not otherwise have access to." (Nan Roth - Hearing)

"How can San Franciscans permit the direct competition to the Steinhart Aquarium which will surely result in an increased financial burden to an already over-stretched city budget?" (Peter C. Brown)

"The presence of an aquarium facility at Pier 39 would clearly attract a proportion of San Francisco's tourist visitors, and in that way would be competitive with and disadvantageous to the Steinhart Aquarium.

"By Charter Amendment, the City of San Francisco is responsible for furnishing the funds necessary for the upkeep, maintenance and operation of the Steinhart Aquarium. Since 1923 it has provided those funds on an annual basis until such time as citywide revenue shortfalls forced the Academy, with the voters' approval, to implement an admission fee to provide the needed support. Mechanisms are in place that allow San Francisco residents, on Free Wednesdays, and San Francisco school children, on field trips, free admission to the Aquarium. The City now provides less than half of the funding necessary to run the Aquarium, the remainder coming primarily from admissions income.

"We are aware that a financial impact study by Sedway Simmons and Associates has been commissioned and we look forward to its completion.

"In summary, it is our view that if the Underwater World Aquarium at Pier 39 were to be built, attendance to the City's Aquarium would suffer and the admissions revenue lost would significantly affect the quality of its operation." (John E. McCosker)

RESPONSE

The potential impacts on the Steinhart Aquarium are economic in nature and are not environmental impacts within the scope of analysis under the California Environmental Quality Act. At the request of the Department of City Planning, the project sponsor has funded an economic impact study focussing on potential effects of the proposed Underwater World project on the patronage at the Steinhart Aquarium and the secondary effects of such patronage changes on the City's fiscal condition. That study has been completed independently of this Environmental Impact Report. It will be available for the City Planning Commission and the public for use when considering project approval or disapproval.

Wind/Shadow Impacts

COMMENT

"The EIR fails to adequately address San Francisco Proposition M with regard to the public shore and the recreational Marina which will be in-part shaded and have air currents changed by the presence of the proposed structure." (Robert W. Pickard)

RESPONSE

The comment is noted. It is not the purpose of an EIR to establish the basis for approval or disapproval of a project under the planning policies and codes of the City. That function is more appropriately performed as part of the project approval/disapproval process. Proposition M findings must be made as part of the approval/disapproval process. For a discussion of shadow impacts of the proposed project, see page C&R-246.

COMMENT

"The addition of this structure is going to affect the air flow in and around the Marina. What effect will this have on our ability to operate our vessels, particularly sail boats? There are times now when the cross-wind makes it difficult to get into the slip safely, will the changes be beneficial or will they make it even more difficult? This is not addressed by the EIR." (Roy S. Mollard)

RESPONSE

The Final Initial Study for the proposed project, published January 29, 1988, concluded that the proposed project "would not increase wind accelerations in the project vicinity." The existing Pier 39 development casts a wind "shadow" over a portion of the Marina. During typical wind conditions this wind "shadow" extends towards the east. Within this wind shadow, wind velocities are reduced and wind direction is variable. Boats under sail occasionally experience difficulty when entering the wind shadow while maneuvering into slips and need to use auxiliary engines.

The proposed project would have a wind shadow very similar to that of the existing Pier 39 complex, extending easterly over a portion of the Marina. This wind shadow would extend horizontally a similar distance and would be no more severe than the existing wind shadow. The proposed project would extend this wind shadow approximately 100 feet further east over the Marina.[1]

COMMENT

"The building will probably cast a shadow across my boat in mid-afternoon, this is not considered in the EIR." (Roy S. Mollard)

"2. The EIR fails to adequately address the impact of the shading of the east basin (East Marina) by the proposed structure which will block late morning and afternoon sun to some slips. No consideration of the impact upon the Marina slip owners and tenants was provided in the draft EIR." (Robert W. Pickard)

RESPONSE

In the Final Initial Study, included in Appendix A of the EIR, the proposed project was evaluated for potential shadow impacts related to Proposition K. As the proposed structure would be less than 40 feet in height, the threshold established by Proposition K, it was not evaluated for other potential shadow effects. However, at the request of the commentor, shadow studies have been conducted for potential impacts on the Pier 39 marina (east basin) and are discussed below.

There is no Proposition K protected open space in the area of the proposed project. Other open space in the area includes the various plaza areas associated with Pier 39 and the wide sidewalk area in front of and to the southeast of the project site.

The project site contains a portion of the existing Pier 39 complex, and would affect berths in Docks B and A, and the waters of the San Francisco Bay. The existing building on the site casts shadows on some of the berths of Dock B to the east of the project site. Existing and project shadow patterns for various times of the day and year are discussed in detail below.

Shadow patterns for existing and proposed buildings in the project area (including the existing building on the site), and the project are shown for 10:00 a.m., noon, and 3:00 p.m. for the four seasons: during winter and summer solstices when the sun is at its lowest and highest and during the spring and fall equinoxes when the sun is at its mid point (see Figures C&R 23 through C&R 26). For purposes of this analysis the shadows were calculated using a Mean Low Water tide assumption to provide a worst-case scenario. Conditions from July through November mirror the conditions from January through May, (using solar time). The analysis includes shadows cast on water, pedestrian areas, and open space in the area potentially affected by the proposed project. A shadow outline of the project as though cast on the ground is shown to illustrate the scale of the project in relation to the structures that would surround it.

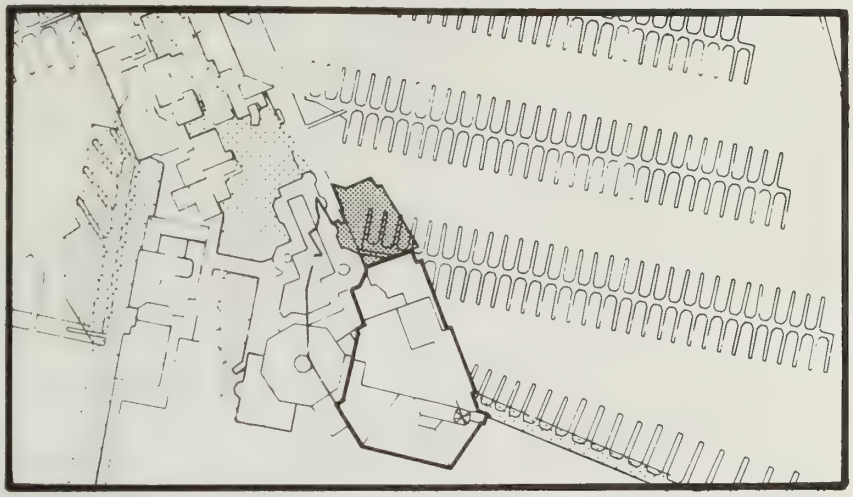
The shadow analysis text below takes into account the latest design for the project (Esherick Homsey Dodge Davis, April 1989). The shadows illustrated on Figures C&R 23, 24, 25, and 26 illustrate an earlier design (the design described in the Draft EIR). This revised design would contain a second level public promenade. The area covered by new shadows resulting from the public promenade at the second level would shift 12 to 15 feet to the north and east of the areas shown on the shadow diagrams, but the extent of shadow coverage would be approximately the same as the original design.

<u>December 21 (PST)</u>

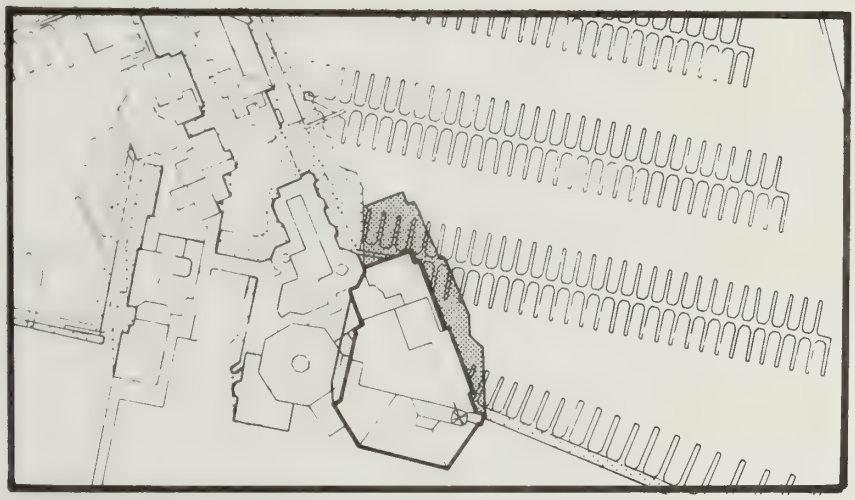
At 10:00 a.m. on December 21, the project would add shadows on the area of Dock B to the north of the project site and onto the Pier 39 walkway along the east side of the pier immediately north of the project site (see Figure C&R 23).

DECEMBER SHADOWS

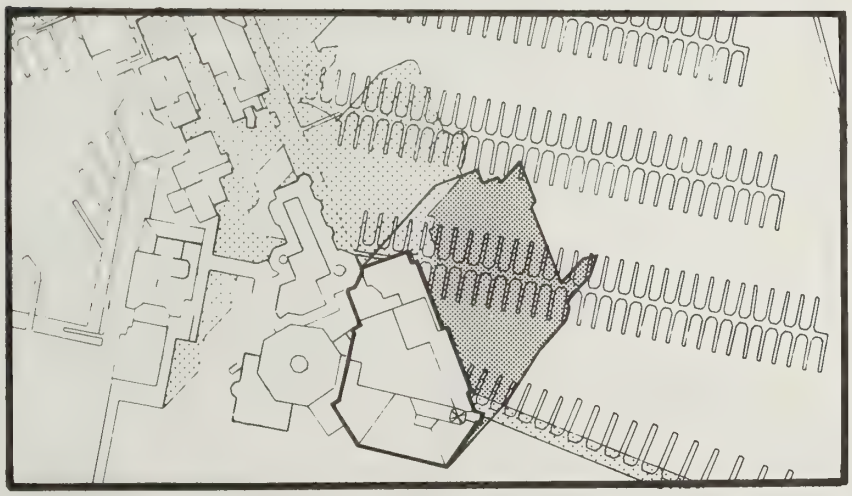
FIGURE C&R 23



10AM PST: Bearing 31.5452 ETS; Tan .4002



12NOON PST: Bearing 2.0173 ETS; Tan .5487



3PM PST: Bearing 40.7806 WTS;

LEGEND

- Project Shadow Outline
- Existing Shadow
- Project Shadow

SOURCE EIP ASSOCIATES

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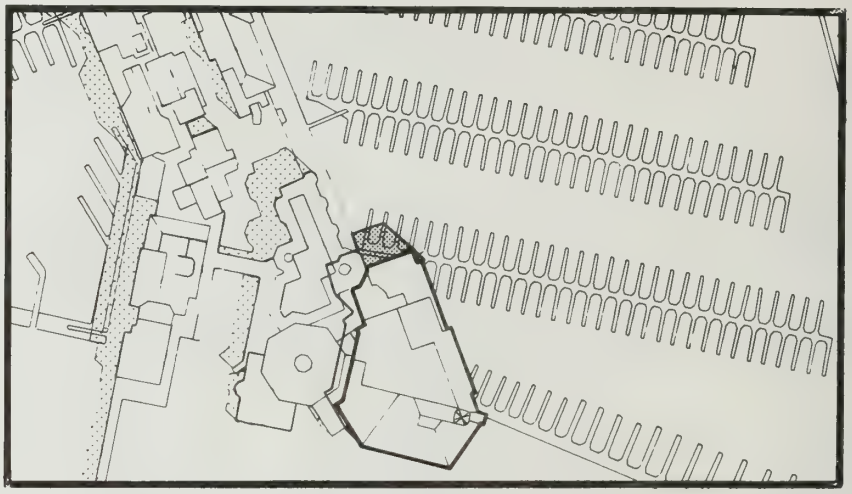
FEET 0 50 100 200

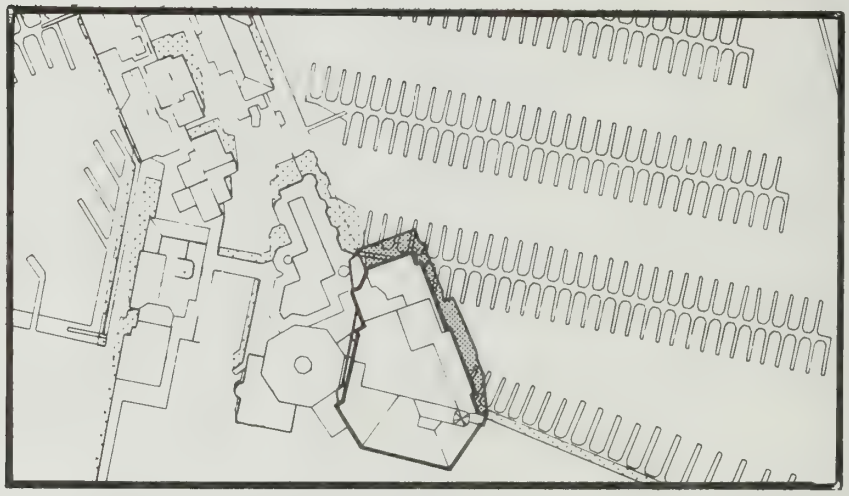
eip

MARCH SHADOWS

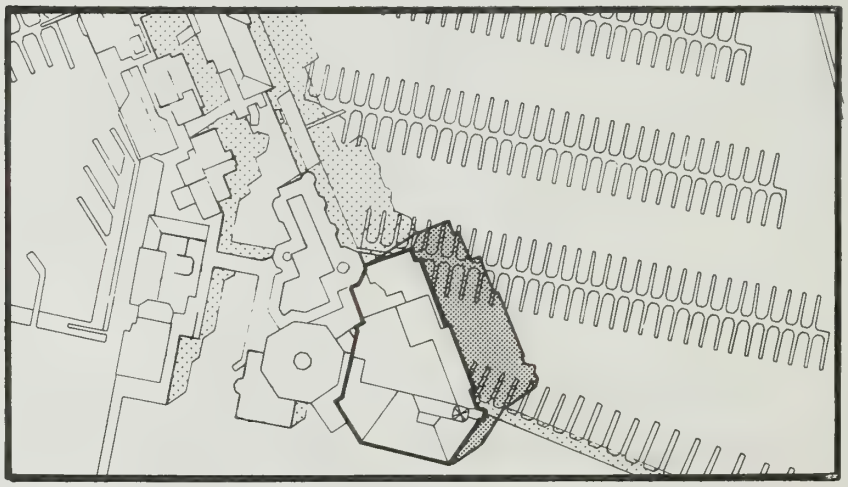
FIGURE C&R 24



10AM PST: Bearing 48.2920 ETS; Tan .8745



12NOON PST: Bearing 6.8408 ETS; Tan 1.3025



3PM PST: Bearing 55.0606 WTS; Tan .7569

LEGEND

- Project Shadow Outline
- Existing Shadow
- Project Shadow

SOURCE: EIP ASSOCIATES

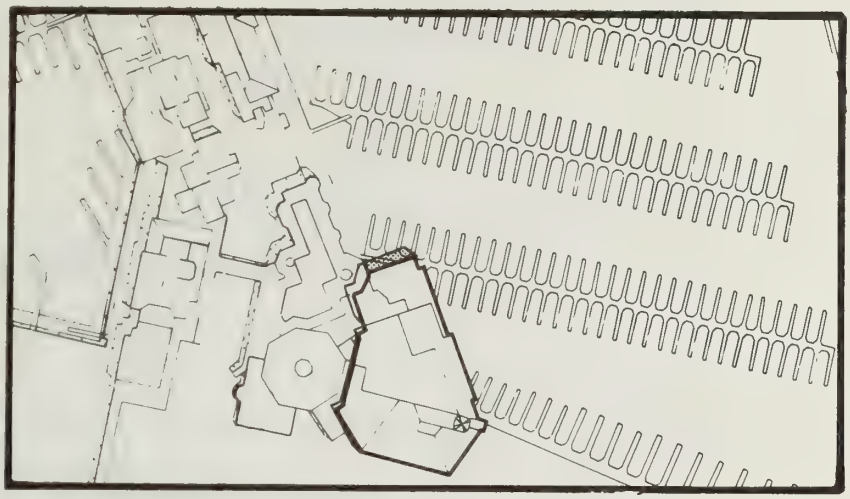
86137

FEET 0 50 100 200

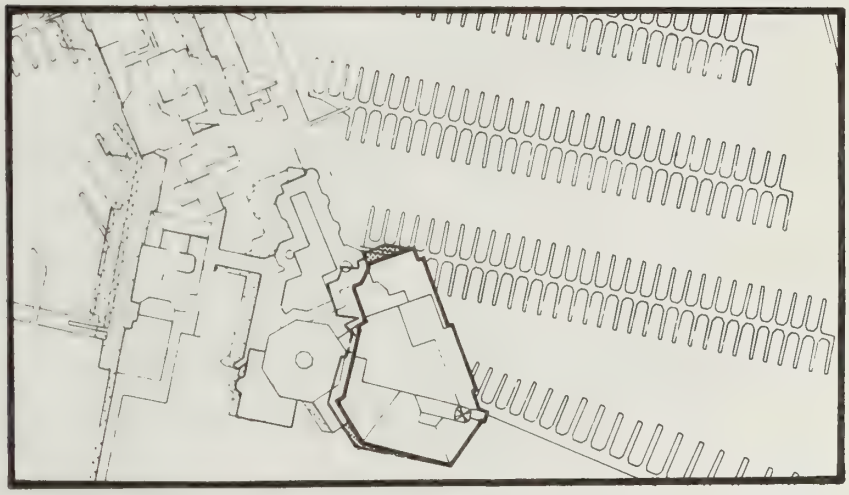
eip

JUNE SHADOWS

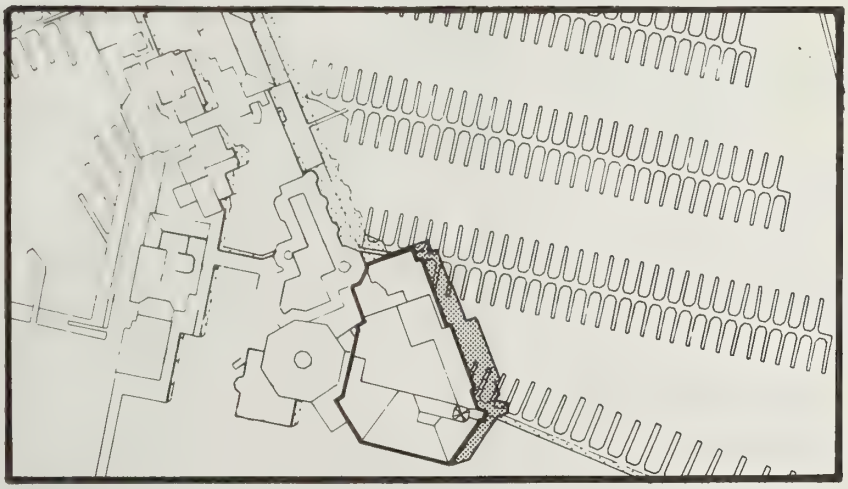
FIGURE C&R 25



10AM PDT: Bearing 84.7265 ETS; Tan 1.0693



12NOON PDT: Bearing 51.8833 ETS; Tan 2.6136



3PM PDT: Bearing 66.0641 WTS; Tan 1.9418

LEGEND

- Project Shadow Outline
- Existing Shadow
- Project Shadow

SOURCE: EIP ASSOCIATES

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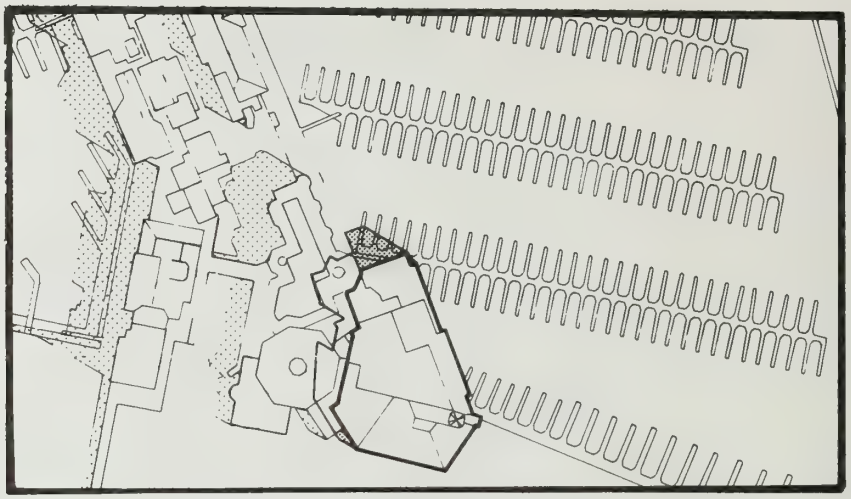
FEET 0 50 100 200

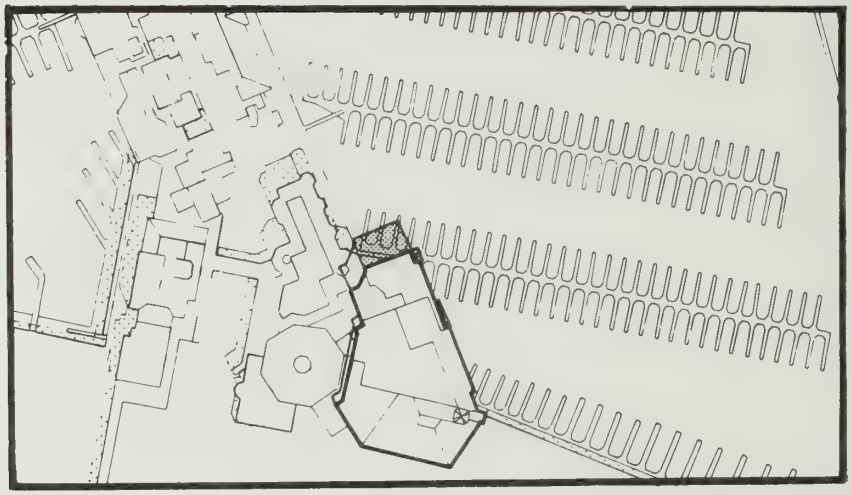
eip

SEPTEMBER SHADOWS

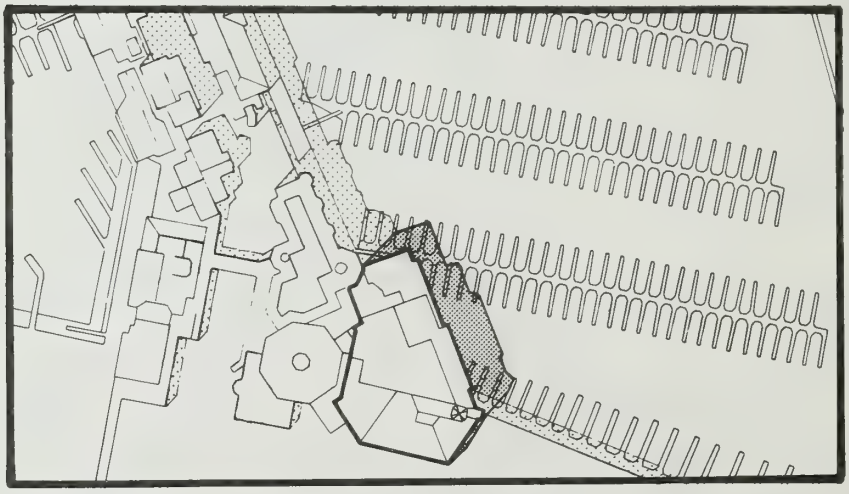
FIGURE C&R 26



10AM PDT: Bearing 59.5271 ETS; Tan .6728



12NOON PDT: Bearing 24.8172 ETS; Tan 1.1935



3PM PDT: Bearing 42.9001 WTS; Tan .9633

LEGEND

- Project Shadow Outline
- Existing Shadow
- Project Shadow

SOURCE: EIP ASSOCIATES

86137

FEET 0 50 100 200

eip

At noon on December 21, the project would add shadows to the area of Dock B to the north and east of the project site and on dock A east of the project site.

At 3:00 p.m. on December 21, the project would completely or partially shadow about 20 berths. The slips which would be affected are mostly in Dock B, however one of the berths which would be partially impacted is on Dock C.

March 21 (PST)

At 10:00 a.m. on March 21, the project would add shadows in the area of Dock B to the north of the project site (see Figure C&R 24).

At noon on March 21, the project would add shadows on the area of Dock B to the north and somewhat to the east of the project site and on Dock A east of the project site.

At 3:00 p.m. on March 21, the project would add shadow to about 10 berths. The slips which would be affected are on Docks A and B.

June 21 (PDT)

At 10:00 a.m. on June 21, the project would add shadows on the area of Dock B north of the project site. About one berth would be affected (see Figure C&R 25).

At noon on June 21, the project would add shadows on the area of Dock B to the north of the project site. No berths would be affected.

At 3:00 p.m. on June 21, the project would add shadows on the area of Dock B to the east of the project site and on Dock A east of the project site.

September 21 (PDT)

At 10:00 a.m. on September 21, the project would add shadows on the area of Dock B to the north of the project site (see Figure C&R 26).

At noon on September 21, the project would add shadows on the area of Dock B to the north of the project site.

At 3:00 p.m. on September 21, the project would add shadows on the area of Dock B to the north and somewhat to the east of the project site and on Dock A east of the project site.

Shadow on Open Space

Open space in the project area that could be affected by the project includes various plaza areas associated with Pier 39 wide sidewalk area in front of and to the southeast of the project site. The plaza areas are located to the west and northwest of the project site and the sidewalk area is located to the south and southeast of the project site. The proposed project would add new shadow to the wide sidewalk area immediately adjacent to the project site both in the early morning and late afternoon times. The extent of these shadows is limited to the area immediately adjacent to the proposed building and can be seen in the 10:00 a.m. and 3:00 p.m. diagrams in Figures C&R 23 through C&R 26.

Miscellaneous

COMMENT

"Page 87 - You don't have the information on revenues the Port is anticipated to get from this project. It is readily available. If you had that you would note that the lowest percentage revenue period is exactly when the project sponsor estimates his revenues to be highest. This is questionable public policy. You need full information on the economics of this project in a public context, both revenues to the Port, how much the port and city in turn are going to have to pay for improvements, and the impact on the Steinhart. This is missing." (Sue C. Hestor)

"Finally, I submitted to staff the revenues to the Port from the various people at Fisherman's Wharf. It is something I got from one of my clients. I think one of the things you need to factor into this is the revenue stream from this project and how much it is paying right now, which is minimal compared to what other businesses on the wharf generate, and how much the city is going to have to then come out of that revenue stream to pay improvements for the wharf." (Sue Hestor - Hearing)

RESPONSE

Information on the revenue stream to the Port generated by the proposed project is an economic effect of the project which is not appropriate for inclusion in the EIR. It will be

considered by the Port Commission when it considers amendments to its lease with the sponsor.

COMMENT

"The aspects that the Hill Dwellers favor are that ocean and bay-related commercial and public activity should be given preference over non-marine and non-maritime proposals at the wharf. And we see this project as a marine and and [sic] maritime related project. That marine educational exhibits be made available to San Francisco and to all of the school children at little or no cost. And we would ask you to address that concern." (Rod Freebairn-Smith)

RESPONSE

The comment is noted.

COMMENT

"The increased number of visitors and the extended hours of operation are going to stretch the resources of the Pier 39 Security staff and the San Francisco Police Dept. This issue of Public Safety is not addressed in the EIR. The present level of crime and violence on and around the Pier is unacceptable." (Roy S. Mollard)

RESPONSE

During the preparation of the Final Initial Study on the project, published January 29, 1988 and included in the EIR as Appendix A, the San Francisco Police Department was contacted regarding potential impacts of the project on the provision of police services. Based on the conclusions of those discussions with the Police Department, it was determined that there would be no significant change in public safety or the provision of police services in the area.

COMMENT

"I have looked in vain for an indication of the persons consulted in regard to this portion of the EIR. The EIR Authors and Persons Consulted Chapter appears to list authors but not persons consulted. Perhaps persons consulted were inadvertently

omitted? Staff of the Academy of Sciences aquarium, fisheries experts, persons familiar with Bay ecology, and RWQCB staff should have been consulted about potential impacts and mitigation measures. Were they?" (Selina Bendix)

RESPONSE

Portions of the EIR Authors and Persons Consulted chapter were inadvertently omitted.

Page 172, at the end of the page, the following is added:

"PERSONS CONSULTED:

"Randy Rossi, Port of San Francisco
Vello Kisk, Port Engineer, Port of San Francisco
William Wycko, Department of City Planning
Rebecca Kohlstrand, Department of City Planning
Stephen Hill, Regional Water Quality Control Board"
Joan Lundstrom, Bay Conservation and Development Commission
Bruce Bernhard, MUNI
Gordon Chester, Department of Public Works
Ronald Niewiarowski, Public Utilities Commission
Michael Cronbach, MUNI

In addition, the following people were consulted during preparation of the Responses to Comments. They will be added to page 172.

Harold Coffee, San Francisco Clean Water Program
Irene Nishimura, Port of San Francisco
Phil Kern, Port of San Francisco
Marc Beyeler, California Coastal Conservancy
James Salerno, Bureau of Water Pollution Control
Steve Medberry, Industrial Waste Division
Bill deBoisblanc, Bay Area Air Quality Management District
Ben Gale, San Francisco Health Department

COMMENT

"The energy impacts discussion in the Initial Study contains no mention of ozone generation, so I cannot tell if the analysis includes energy consumption by ozone generation. On p. A-27 it is stated that the ozone would be 'generated on-site at the rate of 6 lbs of O_3/day,' but it does not say how it would be generated. It also says that a 'small, electric driven air compressor would operate intermittently.' What is 'small'? Are these two items too small to be relevant to the energy analysis? There is not enough information to judge." (Selina Bendix)

RESPONSE

The energy consumption information described in Table 1 and Figures 6 and 7 is described in Footnote 1 of Table 1. It includes "space conditioning, service water heating and lighting in accordance with allowable limits under Title 24. This does not include the pumping and filtering of water." The energy consumed by the ozonator is also not included. The ozone generator uses a 230 V 60 Hz power supply and has an energy demand of 45 kWh per day. The air compressor associated with the system is driven by a one horsepower electric motor and has an energy demand of 6.6 kWh per day. By comparison, total annual electrical consumption for the project is projected to be about 3,890 kWh per day. Together, the ozone generator and air compressor would represent about 1.3% of this total.

COMMENT

"Page 147, Mitigation Measures - Construction Noise - One of the mitigation measures needed to be added here is a Wharf Rat Abatement Program, as any construction in the area brings them to the surface in mass. The rats begin to set up above ground operations inside establishments and believe me . . . these are not the kind of rats you normally think of when you think of a rat. We're talking the size of a large cat. This can be a serious health problem." (Peter C. Brown)

RESPONSE

Rats are a common problem during construction activities in general. As the commenter notes, this problem is greater along the Waterfront than elsewhere. The Port of San Francisco Property Department employs a rodent control contractor who sprays and puts down traps. This contractor works on an on-call basis, in response to complaints from tenants. The City Health Department calls for a more proactive approach to rat abatement during construction on the waterfront. Rodent abatement measures would include, but would not be limited to, baiting, trapping and population elimination, with close follow up, prior to demolition and construction.[2]

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[1] Don Ballanti, Certified Meteorologist, personal communication, May 1, 1989.

[2] Ben Gale, Director, San Francisco Health Department, Bureau of Environmental Health, telephone conversation, March 23, 1989.

IV. STAFF-INITIATED TEXT CHANGES

Since publication of the Draft EIR, the proposed project design has been refined to allow increased public access to views of the Bay. None of these changes would result in changes to the impacts analyses presented in the Draft EIR. Figures C&R 27 and 28 compare the previous and proposed designs. The Project Description section of the Draft EIR, pages 12-17, will be revised as follows (changes are underlined):

"3. PROJECT DESCRIPTION

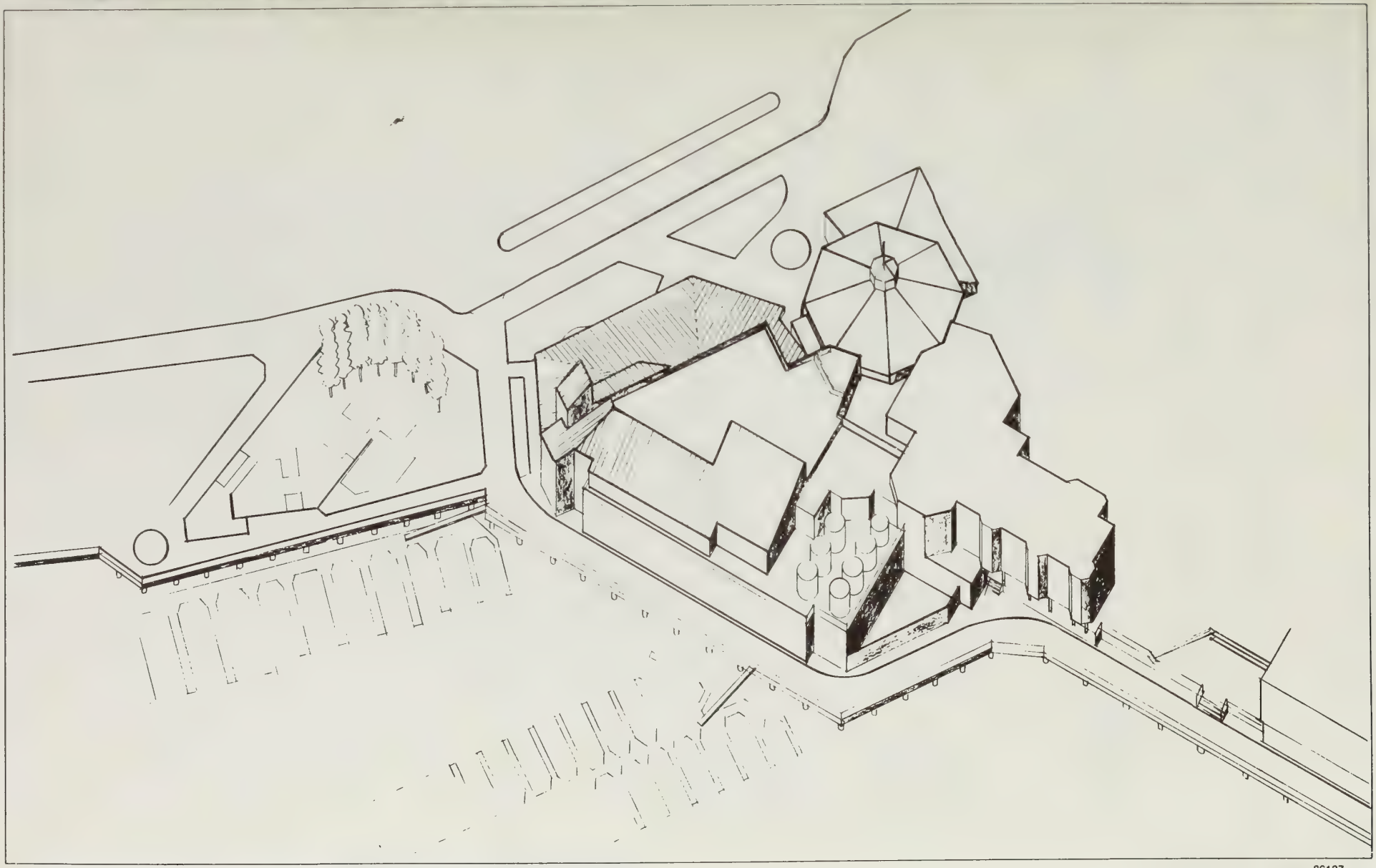
The development of Pier 39 was approved in August 1976 as a Conditional Use (City Planning Commission Resolution 7551, modified in March 1980 with CPC Resolution 8548, see Appendix E). Pier 39 consists of approximately 198,000 gross square feet of small-scale retail, restaurant and theatre uses, a 351-berth public marina, a waterfront park, and a 937-car parking garage.

"A. Site Area

The proposed project would be an aquarium and educational facility built on piles over the Bay in the Pier 39 marina and attached to the existing Pier 39 development. The entire Pier (from the seawall) consists of 261,676 square feet. The proposed project would add 19,900 square feet of new pier area of which 11,800 square feet would be under the building (aquarium structure) and 8,100 square feet would be other new pier area (view bays, roadway, loading, and Pier 39 service area), which would serve both as a service access road to the Pier 39 complex and as public pedestrian access to the perimeter of Pier 39. This additional 19,900 square feet of new pier area would result in the removal of 18 boat slips that currently occupy the Pier 39 marina. As a result of the proposed project, the total new square footage of Pier 39 would be 281,576 (see Table 1, below).

AXONOMETRIC VIEW OF PREVIOUS DESIGN

FIGURE C&R 27



SOURCE: ESHERICK, HOMSEY, DODGE AND DAVIS

NO SCALE

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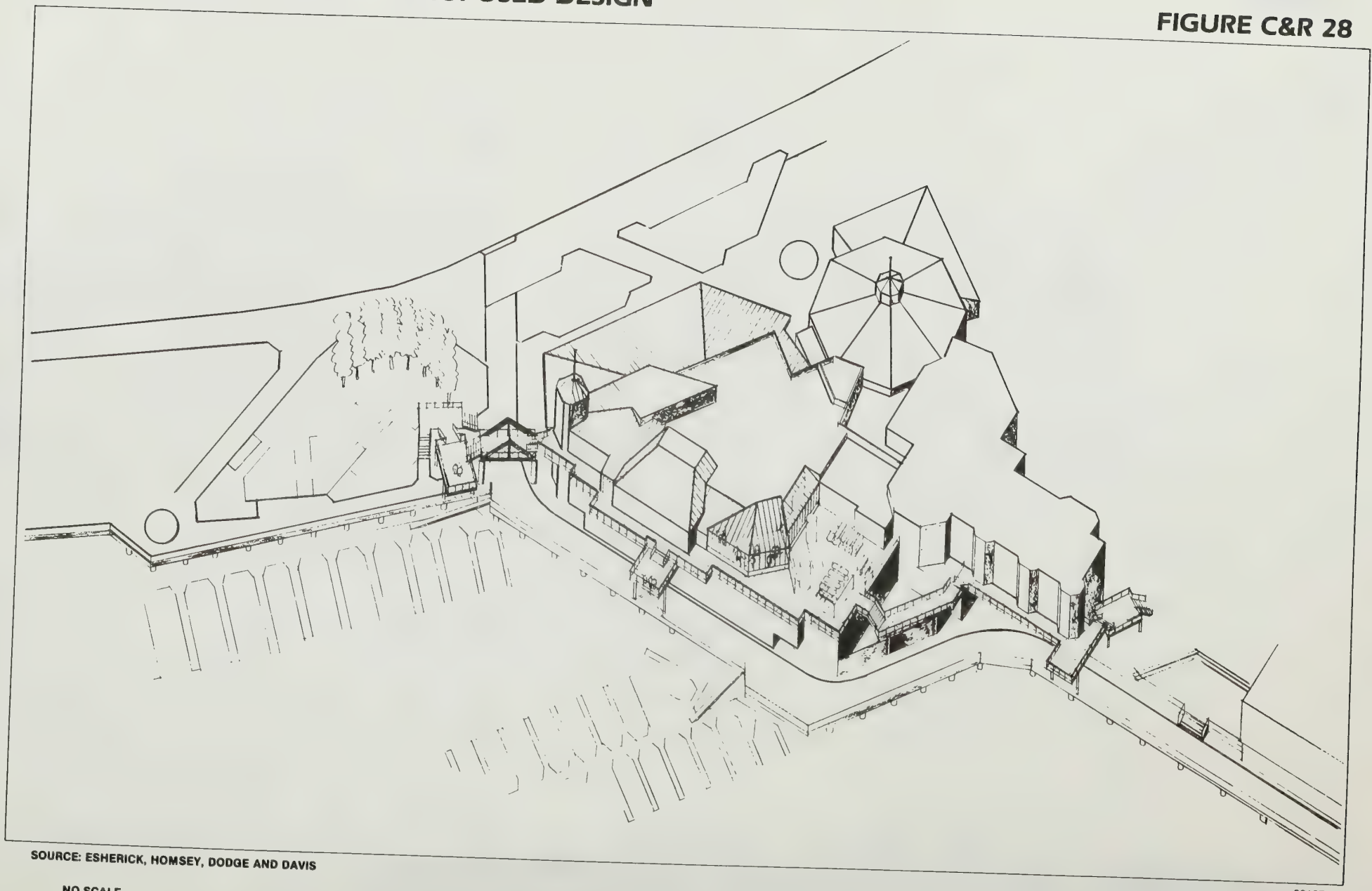
AXONOMETRIC VIEW OF PROPOSED DESIGN

FIGURE C&R 28



SOURCE: ESHERICK, HOMSEY, DODGE AND DAVIS

NO SCALE

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TABLE 1

SITE AREA CALCULATIONS

		Square Feet
Pier 39 Site Area		
Existing		261,676
Proposed New Pier Area		
Under Building Footprint	11,800	
Other New Pier Area	8,100	
Total New Pier Area		19,900
Total Proposed Pier 39 Site Area		281,576
Footprint of New Building		
Portion on Existing Pier		13,700
Portion on New Pier		11,800
Total Footprint of New Building		25,500
Footprint of New Deck		19,900

Source: Esherick Homsey Dodge and Davis; EIP Associates.

"The proposed project would be constructed on both existing and new piles. Of the total 25,500 square foot footprint of the new building, 13,700 square feet would be built on the existing Pier 39 structure and 11,800 square feet of the building footprint would be built on new piles (see Table 1).

"B. Proposed Project Building Area

The aquarium site currently contains a 2-story building with various video entertainment games on the first floor. The building would be partially demolished on the east side (approximately 4,100 square feet) but the existing octagonal construction on the west side would be retained. There would be no changes to the existing theatre on the second floor.

"The proposed project would contain a total of 49,400 gross square feet of floor area, of which 45,900 would be new construction. The first story of the proposed aquarium would contain approximately 25,500 gsf of area including the lobby, the main tanks, a book shop, a tidal pool, and storage and mechanical rooms. There would be a service yard at the eastern end of the building. A partial mezzanine would contain 8,200 gsf of area including catwalk over the tanks, a book shop mezzanine, a lab, and staff service rooms. The second story of the project would contain approximately 14,050 gsf of area including administrative offices, an education and function room, exhibit areas, a storage room and a filter yard. At the second story a public promenade with view decks would run along the northeastern side of the building providing new views of the Pier 39 marina and the Bay. A third story would contain 550 gsf for a new stairway and related space, and the roof would contain 1,100 gsf of enclosed mechanical space (see Table 2).

"C. Pier 39 Building Area

The entire Pier 39 development is comprised of approximately 198,000 gross square feet (gsf). This includes 123,678 gsf of retail space, 65,872 gsf of restaurant space, 8,450 gsf of theatre space (240 seats) and a 351-slip marina. The proposed project would remove 4,100 gsf of existing retail space and add 45,900 gsf of retail use (for a net change of +41,800 gsf). The proposed project would also remove 18 existing boat slips. There would be no changes to restaurant and theatre uses at Pier 39. Upon completion of the proposed project, there would be a total of 239,800 gsf in the entire Pier 39 complex including 165,578 gsf of retail space (see Table 3).

TABLE 2

UNDERWATER WORLD AQUARIUM CHARACTERISTICS

	New	Existing (Building Q Pier 39)	Total
Area By Use			
Lobby/Public Circulation	2,800		
Book Shop	2,200		
Office and Staff	3,800		
Exhibit Areas	6,300		
Function Room and Service Area	2,350		
Large Tank	9,500		
Service Area		1,550	
Tank Service Areas	3,800		
All Other Areas (toilets, halls stairs, storage, auxiliary areas, walls, mech. rooms, etc.)	15,150	1,950	
TOTAL GROSS	45,900	3,500	49,400
Area By Floor (Gross Enclosed)			
First	23,500	2,000	25,500
Mezzanine	7,800	400	8,200
Second	13,500	550	14,050
Third	0	550	550
Roof Mechanical	1,100	0	1,100
Total Aquarium Area	45,900	3,500	49,400
Building Area Removed	N/A	-4,100	-4,100
NET BUILDING GAIN			45,300

Source: Esherick Homsey Dodge and Davis; EIP Associates.

TABLE 3

PIER 39 FLOOR AREA CALCULATIONS

		Gross Square Feet	Occupied Square Feet
Pier 39 Existing			
Retail		123,678	111,330
Restaurant		65,872	52,720
Theatre	240 seats	8,450	8,450
Marina	351 slips	N/A[1]	N/A[1]
TOTAL		198,000	172,500
Proposed Project			
Retail			
Added		45,900	26,120
Removed		4,100	3,600
Net Change		41,800	22,520
Marina			
Removed	18 slips		
Pier 39 Future			
Retail		165,478	133,850
Restaurant		65,872	52,720
Theatre	240 seats	8,450	8,450
Marina	333 slips	N/A[1]	N/A[1]
TOTAL		239,800	195,020

[1]Not applicable.

Source: Esherick Homsey Dodge and Davis; EIP Associates.

"D. Other Project Characteristics

The main entrance to the aquarium would be from The Embarcadero, on the east side of the main Pier 39 thoroughfare. Visitors would enter the facility and pass through an educational exhibit (a tide pool display) prior to entering an acrylic tunnel through the aquarium tank.

"The aquarium tank would contain approximately 707,000 gallons of salt water drawn from the Bay at the end of Pier 39 and filtered through a set of pressure filtration tanks. Water in the tank would not be heated or cooled; it would remain at the ambient San Francisco Bay temperature, and the circulation system would be semi-closed. A semi-closed system allows the aquarium water to be gradually released and replaced while being continuously circulated and filtered. A moveable walkway would carry visitors through an acrylic tunnel passing through the interior of the aquarium tank. The aquarium would contain approximately 2,000 fish which are indigenous to the Bay Area and Northern California.

- "Within the 51,400 square-foot delineated site coverage area as shown in Figures 21A and 21 B of the DEIR, the proposed project would result in the net loss of approximately 1,100 square feet of ground level landscaping, and 3,600 square feet of ground level pedestrian pavement. The proposed project would result in the net addition of 1,800 square feet of ground level covered open space and 600 square feet of ground level roadway which would extend around the entire Pier 39 development (see Table 6). The proposed project would also result in the net addition of approximately 7,000 square feet of second level public promenade with view decks along the northeastern side of the building. See Figure C&R 28 on page C&R-259.

- "In addition to the changes in site coverage described above, the proposed project could result in changes in site coverage outside the 51,400 square-foot area designated in Figures 21A and 21B. With the inclusion of the mitigation measures for transportation as described on pages 144-146 of the DEIR as modified by pages C&R-128 and -129, -154 through -162 and the first Addendum (June 1, 1989), there could either be a net addition of approximately 6,000 square feet of ground level pedestrian pavement and landscaped open space near the project site through the conversion of the existing tour bus/taxi loading area or a net loss of approximately 5,400 square feet of existing open space through the extension of the

existing tour bus/taxi loading area. In addition, there would be a net loss of approximately 3,000 to 6,000 square feet (depending on the alternative) of ground level open space area contained in Seawall Lot 312."

"The proposed project would rise two stories and be approximately the same height as the existing building. The ground floor facade of the proposed project would consist of glass block along The Embarcadero and board form concrete and wooden fencing along the service road. Above ground materials include wood facades, louvers and dark colored metal roofs. A new wooden railing would be constructed, similar to the one which now exists, on the east side of the new pier deck (see Figures 2 through 9).

"As part of the proposed project, the sponsor would expand the capacity of the existing Pier 39 parking garage by 100 to 120 spaces by restriping to increase the number of compact stalls (18 spaces), reconfiguring the layout of existing stalls (22 spaces), and increasing valet operations in the garage (60 to 80 additional valet spaces beyond the number of valet spaces used today during peak summer weekends). In addition, the

TABLE 6

PROJECTED CHANGES IN SITE COVERAGE RESULTING FROM PROPOSED AQUARIUM
(In Gross Square Feet)

	Existing	Proposed	Net Change
Enclosed Building	4,100	25,400	+21,300
Covered Open Space[1]	2,900	4,700	+1,800
Landscaping	6,700	5,600	-1,100
Pedestrian Pavement	11,000	7,400	-3,600
Perimeter Accessway	6,200	6,800	+600
Service Area	1,100	1,400	+300
Water	13,700	0	-13,700
Slips	5,700	0	-5,700
TOTAL AREA[2]	51,400	51,400	0

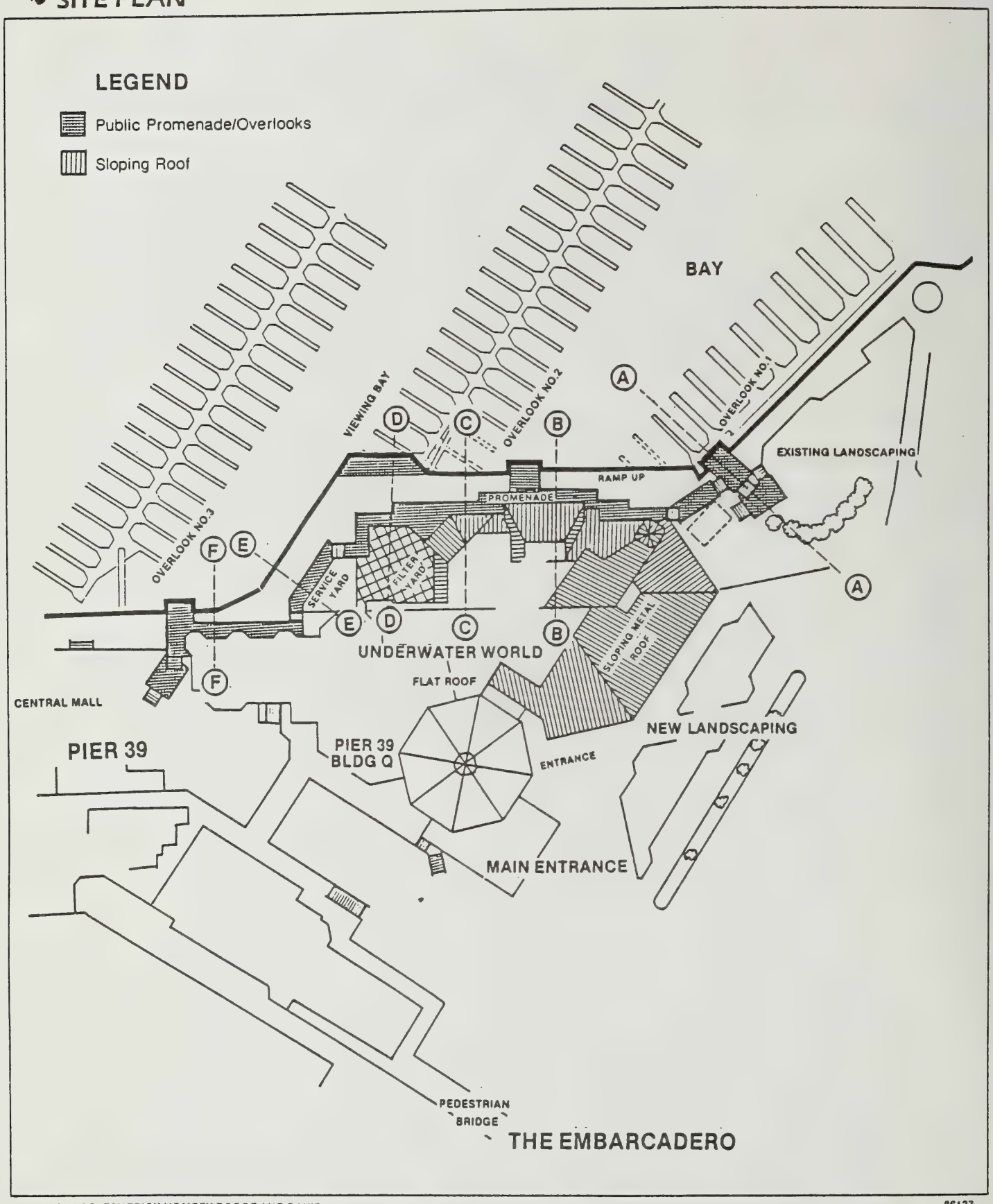
[1]Covered Open Space is defined as those areas open to public access and covered by a roof overhang or upper story building.

[2]This delineated area of 51,400 square feet is arbitrary and was identified for the purposes of tracking changes in open space area around the project site.

Source: Esherick, Homsey, Dodge and Davis; EIP Associates

SITE PLAN

FIGURE 2



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

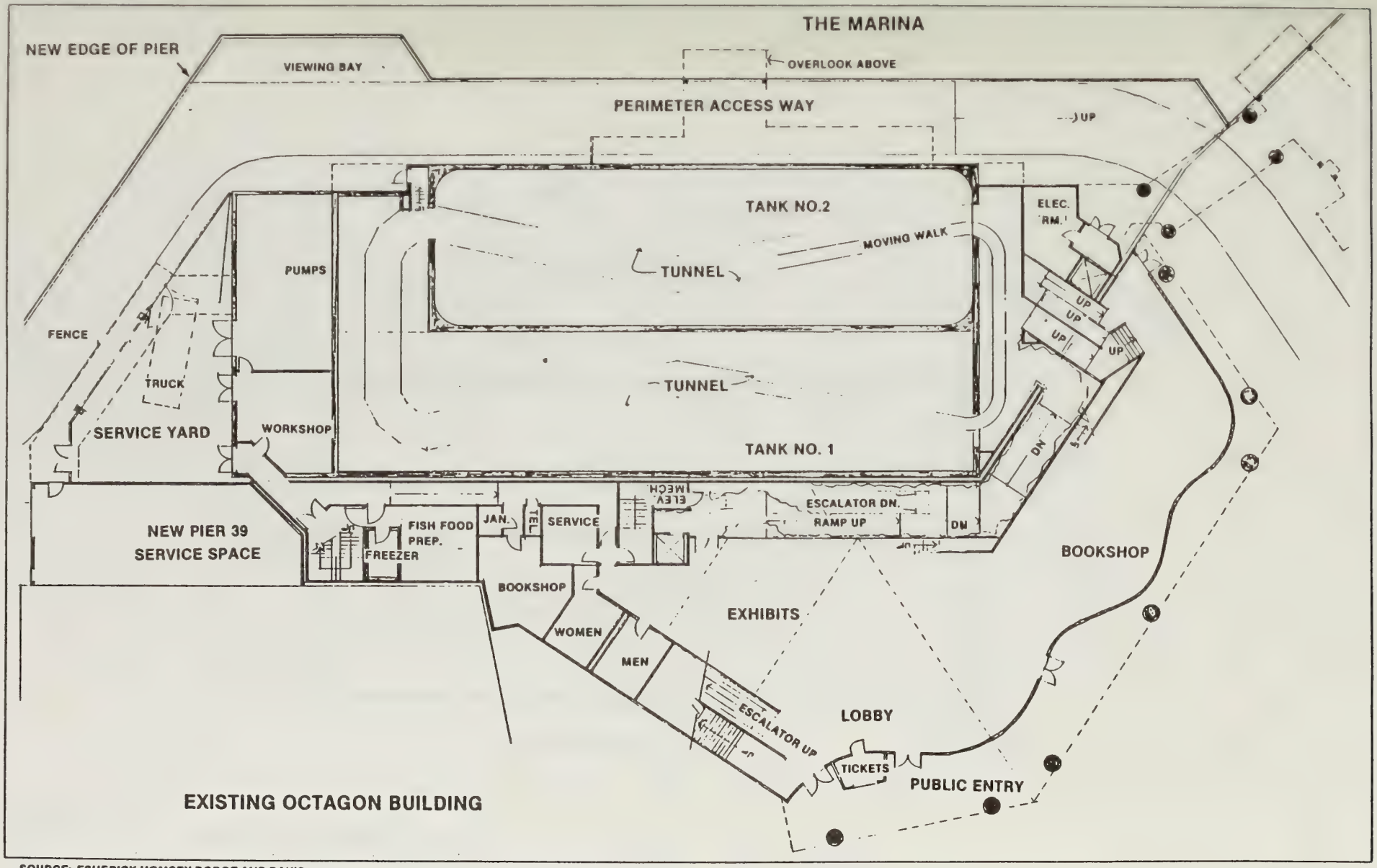
NO SCALE

86137

eip

FIRST FLOOR

FIGURE 3



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

NO SCALE

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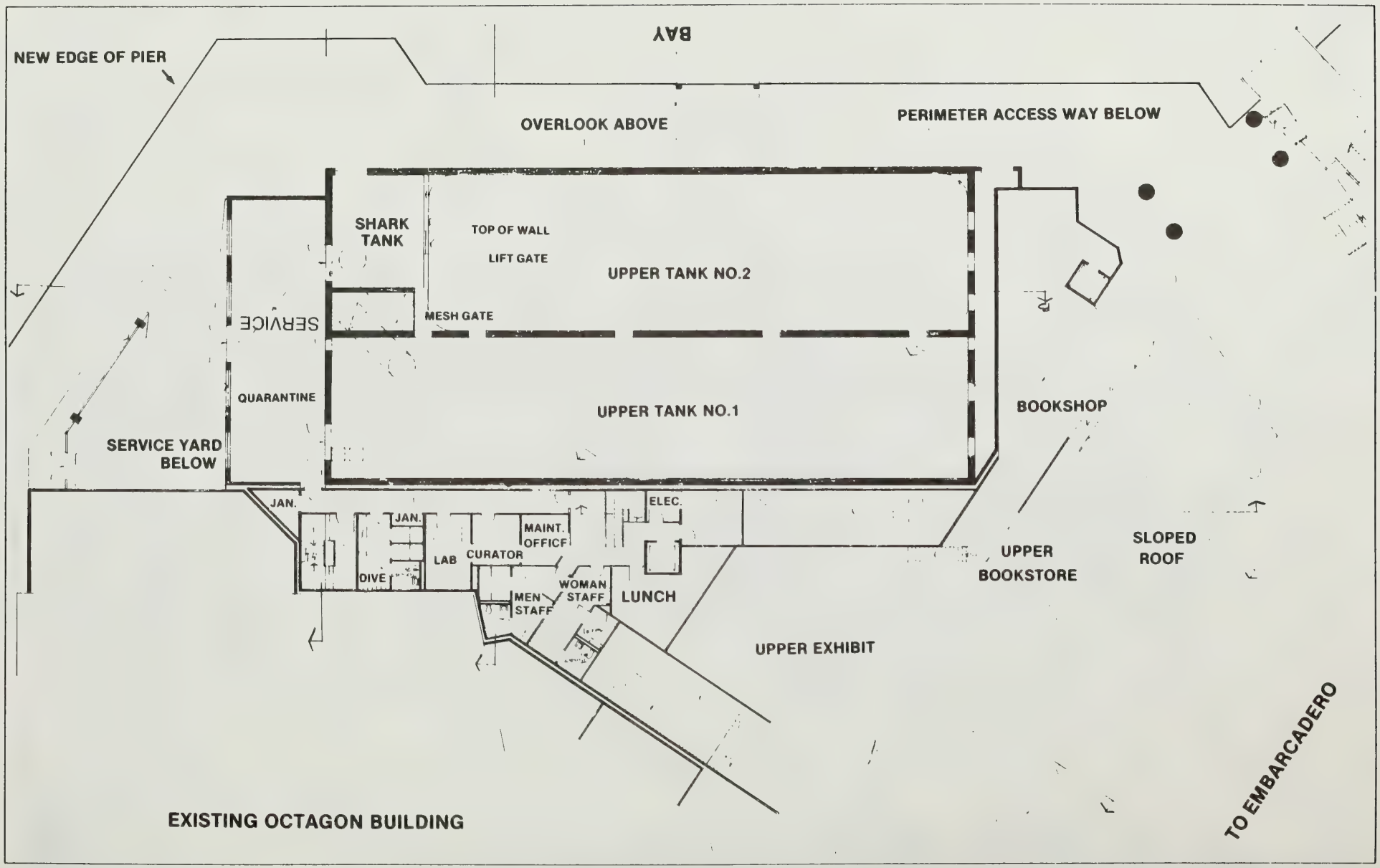
MEZZANINE LEVEL

FIGURE 4



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

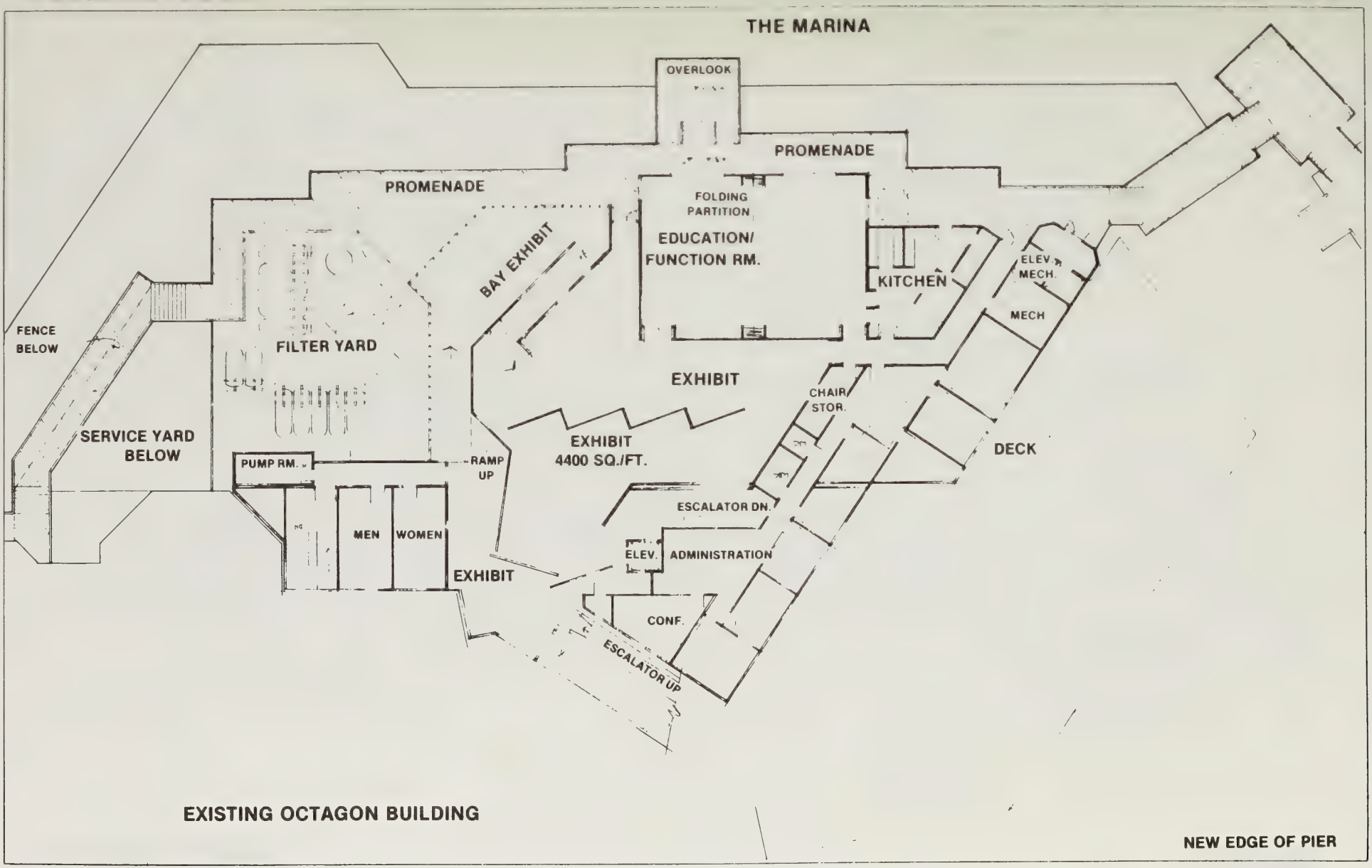
NO SCALE

86137

eip

● SECOND FLOOR

FIGURE 5



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

NO SCALE

86137

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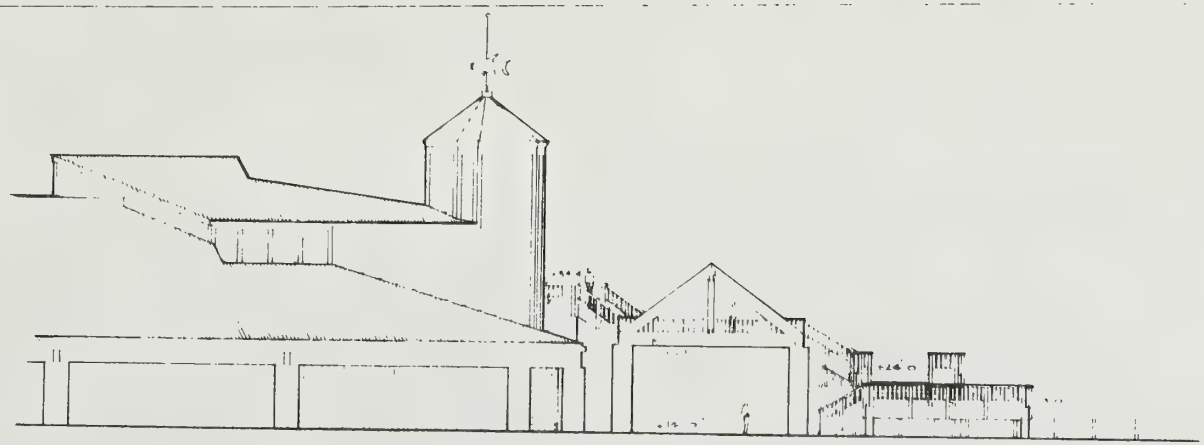
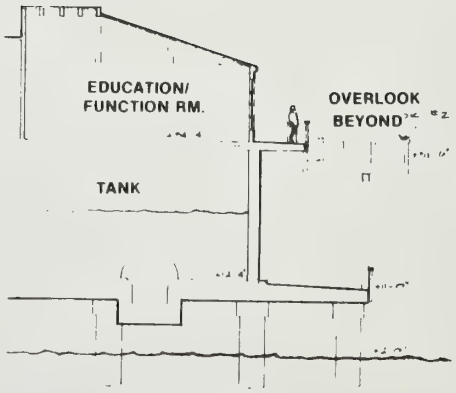
C&R-269

SECTION DRAWING

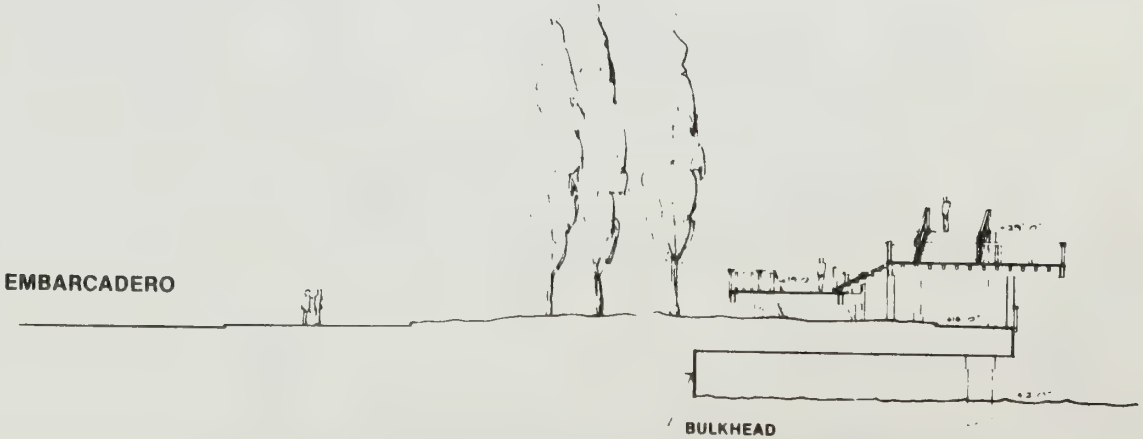
FIGURE 6



SOUTH ELEVATION STUDY AT PROMENADE



SECTION B-B



SECTION A-A

SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

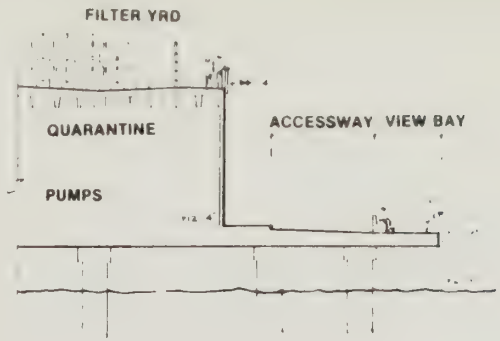
NO SCALE

86137

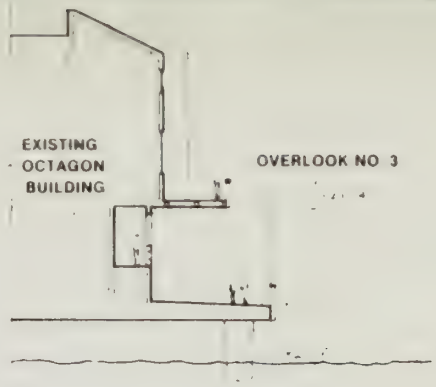
eip

SECTION DRAWING

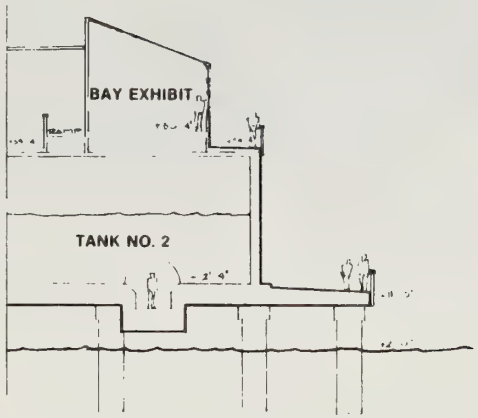
FIGURE 7



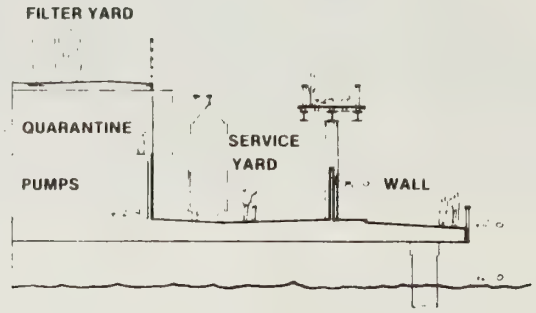
SECTION D-D



SECTION F-F



SECTION C-C



SECTION E-E

SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

NO SCALE

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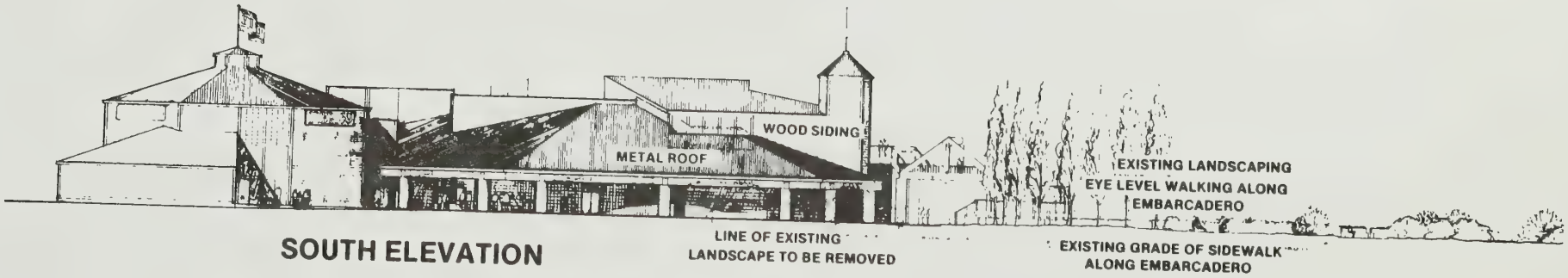
C&R-271

SOUTH ELEVATION

FIGURE 8



SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

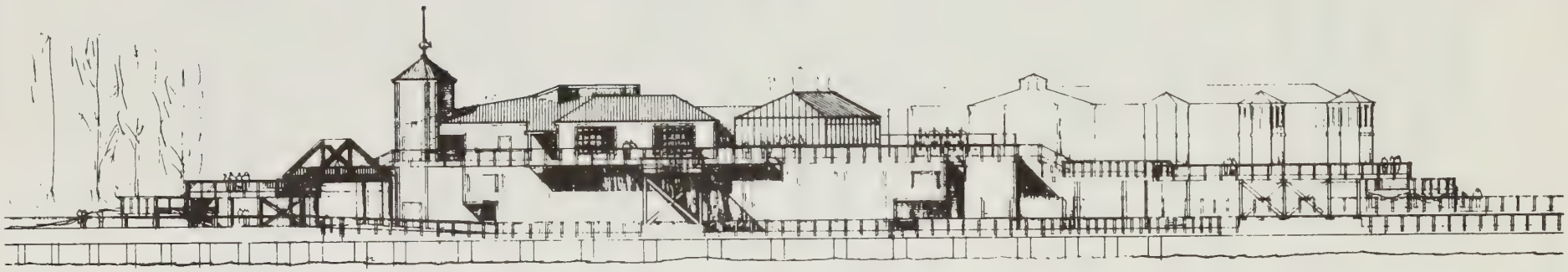
NO SCALE

86137

eip

EAST ELEVATION SHOWING SECOND LEVEL PROMENADE

FIGURE 9



EAST ELEVATION SHOWING 2ND LEVEL PROMENADE

86137

SOURCE: ESHERICK HOMSEY DODGE AND DAVIS

NO SCALE

eip

sponsor would cause 400 spaces to be opened to the public on weekends in order to accommodate additional demand generated by the Underwater World project at the AMPCO parking garage at 80 Francisco Street. Signage would be placed near queuing lines along The Embarcadero and traffic/parking control personnel would help redirect people to the parking garage at 80 Francisco Street.

"The proposed site plan (see Figure 2), includes one new off-street loading space to be located on the northern edge of the aquarium."

EIR pages 70 and 71, change the first four paragraphs under "A. Land Use, Zoning and Bay Fill" to read as follows (revisions are underlined):

"1. LAND USE

The existing pier has a footprint of 261,676 square feet (from the seawall) and contains approximately 198,000 square feet of small-scale retail, restaurant and theatre uses. The proposed project would add 19,900 square feet to the footprint of Pier 39 (for a total of 281,076 square feet) and 41,800 net new gross square feet (for a total of 239,100 gross square feet). About eighteen boat slips in the marina (of which 16 are leasable) would be removed and the lessees of the slips to be removed would be offered the option of either relocating to one of the approximately 50 vacant slips in the Pier 39 marina or transferring their leasehold interest to the Pier 39 Limited Partnership at prevailing market rates. See Table 1 and Table 3.

"The proposed aquarium would contain a total of 49,400 gross square feet (gsf) including lobby and public circulation (2,800 gsf), a book shop (2,200 gsf), office and staff space (3,800 gsf), exhibit areas (6,300 gsf), function room and service area (2,350 gsf), a large tank (9,500 gsf), service area (1,550 gsf), tank service areas (3,800 gsf), and ancillary space (17,100 gsf).

"Approximately 4,100 square feet of the existing building would be removed which currently contains an amusement ride. The net increase of space would be 45,300 square feet. Table 2, summarizes the proposed project characteristics.

- "Within the 51,400 square-foot delineated site coverage area as shown in Figures 21A and 21B of the DEIR, the proposed project would result in the net loss of approximately 1,100 square feet of ground level landscaping, and 3,600 square feet of ground level pedestrian pavement. The proposed project would result in the net addition of 1,800 square feet of ground level covered open space and 600 square feet of

ground level roadway, which extends around the entire Pier 39 development. The proposed project would also result in the net addition of approximately 7,000 square feet of public promenade with view decks along the northeastern side of the building. Table 6 summarizes the changes in intensity of open space land adjacent to Pier 39 within the delineated site coverage area. Figures 21A and 21B, show these changes graphically. The perimeter access road/pedestrian walkway would be relocated around the new construction.

The project sponsor proposes to mitigate this impact by improving the resulting open space and other Pier 39 open space. These improvements could include: 1) Installation of protected pedestrian overlooks, cantilevered over water from the existing and relocated perimeter walk/roadway. These pedestrian overlooks would include benches, viewfinders, special low night lights, and special displays on the content of the important visual landmarks, and other pedestrian amenities, 2) Protecting the pedestrian space from vehicles at the north end of the pier by the installation of bollards, and 3) Expansion of the open deck on the second floor, <u>including a public promenade with view decks running along the northeastern side of the building that would provide new views of the Pier 39 Marina and the Bay</u>."

Page 77, last paragraph:

Second line, change "19,400" to "19,900."

Fourth line, change "7,600" to "8,100."

Fifth line, change "16" to "18."

In order to correct errors in the Draft EIR, the following changes will be made:

Page 33, last paragraph, change "Objective 10" to read "Objective <u>8</u>."

Page 35, sixth and seventh paragraphs, change "Fisherman's Wharf Area, Objective 1" to read "Fisherman's Wharf Area, Objective <u>11</u>."

Page 35, eighth paragraph, change "Fisherman's Wharf Area, Objective 2" to read "Fisherman's Wharf Area, Objective <u>12</u>."

Page 36, first and second full paragraphs, change "Fisherman's Wharf Area, Objective 2" to read "Fisherman's Wharf Area, Objective <u>12</u>."

Page 36, third full paragraph, change "Fisherman's Wharf Area, Objective 4" to read "Fisherman's Wharf Area, Objective 14."

Page 37, third paragraph, delete second sentence.

Since the preparation of the Draft EIR, CEQA has been amended to require that responsible agencies adopt monitoring plans to assure that mitigation measures imposed to prevent significant environmental impacts are implemented. In order to provide more information about how the mitigation measures described in the EIR could be monitored, the following changes to the Draft EIR will be made.

On page 135 of the EIR, add a new sentence to the first paragraph:

> "Some of these measures mitigate impacts which may not be found to be significant.

On page 135 of the EIR, add new third and fourth paragraphs as follows:

> "Some of the measures described below are required by law or regulation. The project could not proceed without incorporating these measures, whether or not they are included as conditions of approval. These requirements would be enforced and monitored by the appropriate public agency, as described in the measures.
>
> "Because the EIR is developed early in the project review process, some of the mitigation measures and monitoring measures described below are conceptual in nature. They will be specified more precisely when and if the project and particular conditions of approval are considered by the decision-makers. Mitigation measures which consist of design features and construction practices are implemented and monitored as part of the building permit process."

On page 136 of the EIR, after the first partial paragraph add the following:

> "The project sponsor would submit periodic reports to the Department of City Planning disclosing actual attendance figures and admissions practices."

On page 136 of the EIR, after the first full paragraph add the following:

> "Before the issuance of occupancy permits for the project, the project sponsor would submit a report to the Department of City Planning showing that the required alterations to the garage have been carried out."

On page 136 of the EIR, after the second full paragraph add the following:

> "Before the issuance of occupancy permits for the project, the project sponsor would submit a report to the Department of City Planning showing that the sponsor has entered into a lease for twenty years with the owners of the garage at 80 Francisco Street or an alternative garage."

On page 144 of the EIR, after the first full paragraph add the following:

> "Before the issuance of occupancy permits for the project, the project sponsor would submit a report to the Department of City Planning showing that the required alterations to the garage have been carried out."

On page 144 of the EIR, after the third paragraph add the following:

> "Before the issuance of occupancy permits for the project, the project sponsor would submit a report to the Department of City Planning describing a proposed garage management plan. This plan would be subject to periodic review and approval by the Department of City Planning."

For clarification, on page 144 of the EIR, second bulleted item, change as follows (new language underlined):

- "Construction activity at the project site <u>which could result in transportation impacts</u> would be limited to the 9:00 AM to 3:30 PM time period to help reduce impacts on peak traffic flow."

On page 146 of the EIR, after the first partial paragraph add the following:

- "Before the issuance of occupancy permits for the project, the sponsor would submit a report to the Department of City Planning showing that the implementation of the mitigation measure imposed by the City Planning Commission was complete."

On page 148 of the EIR, add to the sixth paragraph as follows:

> "The Port Engineering Department enforces the same building codes as the Bureau of Building Inspection. Soils reports and foundations studies would be reviewed by Port Engineering staff as part of the review of the project's building permit application."

On page 149 of the EIR, fourth line of the first paragraph, change "Such improvements would include:" to "Such improvements <u>could</u> include:"

On page 149 of the EIR, add a new paragraph as follows:

- "Some or all of these proposed mitigation measures may be required as conditions of approval by the City; some or all may be required as conditions of approval by BCDC under its jurisdiction. Within 30 days after compliance with the condition is required pursuant to the mitigation measures imposed as conditions of approval, the project sponsor would submit a report to the agency imposing the condition detailing the implementation of such mitigation measures, with a copy to the other agency."

APPENDIX A

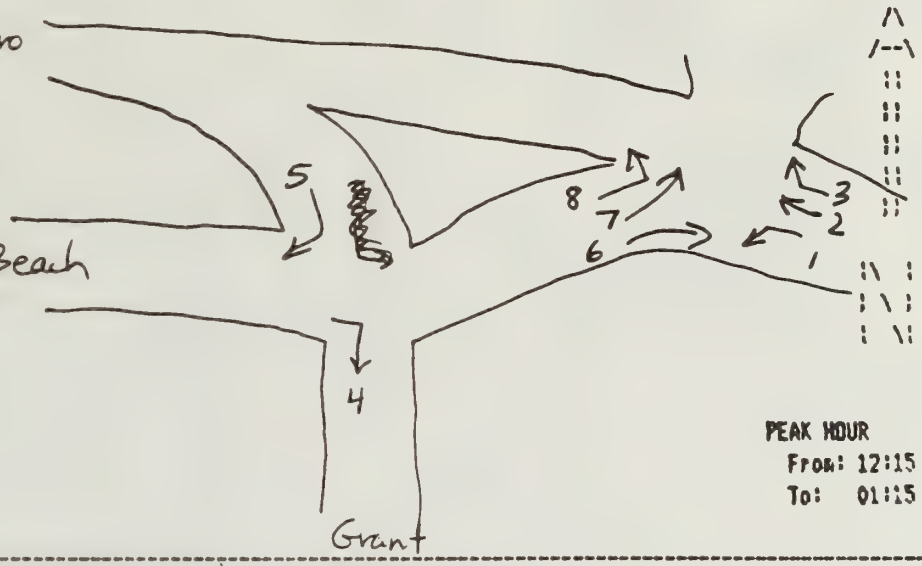
INTERSECTION TURN MOVEMENTS

DKS ASSOCIATES — INTERSECTION TURN MOVEMENT COUNT SUMMARY — 29-Nov-88

INTERSECTION:

EMBARCADERO & BEACH ST

PROJECT: UNDERWATER WORLD
NUMBER: P87048X0
DATE: OCTOBER 22, 1988
NOTES: SATURDAY MID-DAY PEAK
10:30 AM UNTIL 3:00 PM
THIS SHEET 10:30 - 1:30 PM



COUNT TIME
From: 10:30 AM
To: 1:30 PM

PEAK HOUR
From: 12:15 PM
To: 01:15 PM

COUNT DATA

Movement Number

TIME PERIOD From	To	1	2	3	4	5	6	7	8					TOTAL VOLUME
10:30 AM	10:45 AM	21	156	14	4	8	55	10	37	0	0	0	0	305
10:45 AM	11:00 AM	10	33	6	4	3	50	2	14	0	0	0	0	122
11:00 AM	11:15 AM	16	130	10	9	8	58	7	28	0	0	0	0	266
11:15 AM	11:30 AM	18	164	12	16	21	68	4	23	0	0	0	0	326
11:30 AM	11:45 AM	25	143	18	7	16	53	3	29	0	0	0	0	294
11:45 AM	12:00 PM	30	175	13	8	8	60	3	28	0	0	0	0	325
12:00 PM	12:15 PM	12	175	15	10	20	80	6	42	0	0	0	0	360
12:15 PM	12:30 PM	46	161	17	7	16	95	9	31	0	0	0	0	382
12:30 PM	12:45 PM	21	151	13	17	20	83	5	40	0	0	0	0	350
12:45 PM	01:00 PM	39	225	16	21	15	61	5	40	0	0	0	0	422
01:00 PM	01:15 PM	39	180	14	15	24	53	1	40	0	0	0	0	366
01:15 PM	01:30 PM	30	160	4	24	22	102	2	34	0	0	0	0	378

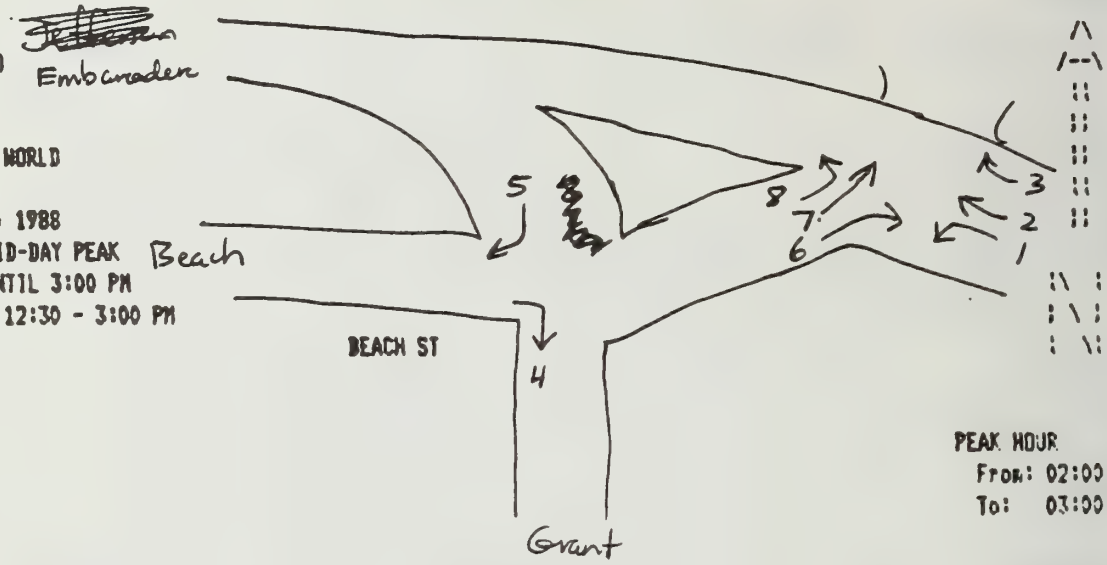
HOUR TOTALS

TIME PERIOD From	To	1	2	3	4	5	6	7	8					TOTAL VOLUME
10:30 AM	11:30 AM	65	483	42	33	40	231	23	102	0	0	0	0	1,019
10:45 AM	11:45 AM	69	470	46	36	43	229	16	94	0	0	0	0	1,008
11:00 AM	12:00 PM	89	612	53	40	53	239	17	108	0	0	0	0	1,211
11:15 AM	12:15 PM	85	657	58	41	65	261	16	122	0	0	0	0	1,305
11:30 AM	12:30 PM	113	654	63	32	60	288	21	130	0	0	0	0	1,361
11:45 AM	12:45 PM	109	662	58	42	64	318	23	141	0	0	0	0	1,417
12:00 PM	01:00 PM	118	712	61	55	71	319	25	153	0	0	0	0	1,514
12:15 PM	01:15 PM	145	717	60	60	75	292	20	151	0	0	0	0	1,520
12:30 PM	01:30 PM	129	716	47	77	81	299	13	154	0	0	0	0	1,516

DKS ASSOCIATES — INTERSECTION TURN MOVEMENT COUNT SUMMARY — 29-Nov-83

INTERSECTION:

EMBARCADERO
& BEACH ST



PROJECT: UNDERWATER WORLD
NUMBER: P87048X0
DATE: OCTOBER 22, 1988
NOTES: SATURDAY MID-DAY PEAK
10:30 AM UNTIL 3:00 PM
THIS SHEET 12:30 - 3:00 PM

COUNT TIME
From: 12:30 PM
To: 3:00 PM

PEAK HOUR
From: 02:00 PM
To: 03:00 PM

COUNT DATA

TIME PERIOD From	To	1	2	3	4	5	6	7	8					TOTAL VOLUME
		Movement Number												
12:30 PM	12:45 PM	21	151	13	17	20	83	5	40	0	0	0	0	350
12:45 PM	01:00 PM	39	225	16	21	15	61	5	40	0	0	0	0	422
01:00 PM	01:15 PM	38	180	14	15	24	53	1	30	0	0	0	0	355
01:15 PM	01:30 PM	30	160	4	24	22	102	2	34	0	0	0	0	378
01:30 PM	01:45 PM	45	192	19	31	23	81	6	34	0	0	0	0	431
01:45 PM	02:00 PM	42	151	10	21	13	83	10	21	0	0	0	0	356
02:00 PM	02:15 PM	38	188	14	16	22	122	3	36	0	0	0	0	439
02:15 PM	02:30 PM	31	165	18	16	27	98	5	41	0	0	0	0	401
02:30 PM	02:45 PM	24	145	10	17	9	130	8	43	0	0	0	0	386
02:45 PM	03:00 PM	40	221	29	25	42	111	6	23	0	0	0	0	497

HOUR TOTALS

TIME PERIOD From	To	1	2	3	4	5	6	7	8					TOTAL VOLUME
12:30 PM	01:30 PM	128	716	47	77	81	299	13	144	0	0	0	0	1,505
12:45 PM	01:45 PM	152	757	53	91	84	297	14	138	0	0	0	0	1,586
01:00 PM	02:00 PM	155	683	47	91	87	319	19	119	0	0	0	0	1,520
01:15 PM	02:15 PM	155	691	47	92	85	388	21	125	0	0	0	0	1,604
01:30 PM	02:30 PM	156	696	61	84	90	384	24	132	0	0	0	0	1,627
01:45 PM	02:45 PM	135	649	52	70	76	433	26	141	0	0	0	0	1,582
02:00 PM	03:00 PM	133	719	71	74	100	461	22	143	0	0	0	0	1,723

DKS ASSOCIATES — INTERSECTION TURN MOVEMENT COUNT SUMMARY — 29-Nov-88

INTERSECTION:
STOCKTON ST
& BEACH ST

PROJECT: UNDERWATER WORLD
NUMBER: P87048X0
DATE: OCTOBER 22, 1988
NOTES: SATURDAY MID-DAY PEAK
10:30 AM UNTIL 3:00 PM
THIS SHEET 10:30 - 12:30

COUNT TIME
From: 10:30 AM
To: 1:30 PM

COUNT DATA

```
                                    0      0      0
                                    :      :      :                    /\
                                    :      :      :                   /--\
                                   (-'     V     '-)                   ::
                          A        0 :          0 A   A               ::
                0  ----'            V            :   '----    0        ::
                                  223   <---   195                     ::
              313  ----)                        (-----   169          ::
                                  356   --)    399
               43  ----,          :            A   ,----    26       :\  :
                     V       69 V          140 :   V                 : \ :
            BEACH ST            (-,      A    ,-)                    :  \:
                                    :      :      :
                                    :      :      :
                                   54      0     86
                                 STOCKTON ST
```

PEAK HOUR
From: 12:30 PM
To: 01:30 PM

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
10:30 AM	10:45 AM	9	0	18	0	0	0	0	68	5	3	28	0	131
10:45 AM	11:00 AM	5	0	11	0	0	0	0	52	4	1	24	0	97
11:00 AM	11:15 AM	12	0	19	0	0	0	0	63	8	5	24	0	131
11:15 AM	11:30 AM	11	0	10	0	0	0	0	77	3	2	33	0	136
11:30 AM	11:45 AM	4	0	22	0	0	0	0	40	2	5	40	0	113
11:45 AM	12:00 PM	5	0	17	0	0	0	0	71	7	6	20	0	126
12:00 PM	12:15 PM	6	0	19	0	0	0	0	71	3	3	26	0	128
12:15 PM	12:30 PM	11	0	13	0	0	0	0	88	9	7	53	0	181
12:30 PM	12:45 PM	15	0	19	0	0	0	0	71	7	7	33	0	152
12:45 PM	01:00 PM	12	0	28	0	0	0	0	80	10	4	45	0	179
01:00 PM	01:15 PM	9	0	9	0	0	0	0	84	13	9	41	0	165
01:15 PM	01:30 PM	18	0	30	0	0	0	0	78	13	6	50	0	195

HOUR TOTALS

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
10:30 AM	11:30 AM	37	0	58	0	0	0	0	260	20	11	109	0	495
10:45 AM	11:45 AM	32	0	62	0	0	0	0	232	17	13	121	0	477
11:00 AM	12:00 PM	32	0	68	0	0	0	0	251	20	18	117	0	506
11:15 AM	12:15 PM	26	0	68	0	0	0	0	259	15	16	119	0	503
11:30 AM	12:30 PM	26	0	71	0	0	0	0	270	21	21	139	0	548
11:45 AM	12:45 PM	37	0	68	0	0	0	0	301	26	23	132	0	587
12:00 PM	01:00 PM	44	0	79	0	0	0	0	310	29	21	157	0	640
12:15 PM	01:15 PM	47	0	69	0	0	0	0	323	39	27	172	0	677
12:30 PM	01:30 PM	54	0	86	0	0	0	0	313	43	26	169	0	691

DKS ASSOCIATES — INTERSECTION TURN MOVEMENT COUNT SUMMARY — 29-Nov-83

INTERSECTION:
STOCKTON ST
& BEACH ST

PROJECT: UNDERWATER WORLD
NUMBER: P87048X0
DATE: OCTOBER 22, 1988
NOTES: SATURDAY MID-DAY PEAK
10:30 AM UNTIL 3:00 PM
THIS SHEET 12:30 - 3:00

COUNT TIME
From: 12:30 PM
To: 3:00 PM

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338 -----)                             (-----   198     ::
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62  ---,           :             A   ,----    32     :\  :
         V       94 V           160 :   V             : \ :
BEACH ST         (-,     A     ,->                    :  \:
                   :      :      :
                   :      :      :
                  76      0     84
```

PEAK HOUR
From: 01:00 PM
To: 02:00 PM

COUNT DATA — STOCKTON ST

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
12:30 PM	12:45 PM	15	0	19	0	0	0	0	71	7	7	33	0	152
12:45 PM	01:00 PM	12	0	28	0	0	0	0	80	10	4	45	0	179
01:00 PM	01:15 PM	9	0	9	0	0	0	0	84	13	9	41	0	165
01:15 PM	01:30 PM	18	0	30	0	0	0	0	78	13	6	50	0	195
01:30 PM	01:45 PM	22	0	22	0	0	0	0	88	13	10	62	0	217
01:45 PM	02:00 PM	27	0	23	0	0	0	0	88	23	7	45	0	213
02:00 PM	02:15 PM	8	0	21	0	0	0	0	80	8	5	42	0	164
02:15 PM	02:30 PM	6	0	9	0	0	0	0	102	9	2	34	0	162
02:30 PM	02:45 PM	12	0	6	0	0	0	0	60	14	2	28	0	122
02:45 PM	03:00 PM	12	0	21	0	0	0	0	103	18	4	39	0	197

HOUR TOTALS

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
12:30 PM	01:30 PM	54	0	86	0	0	0	0	313	43	26	169	0	691
12:45 PM	01:45 PM	61	0	89	0	0	0	0	330	49	29	193	0	756
01:00 PM	02:00 PM	76	0	84	0	0	0	0	338	62	32	198	0	790
01:15 PM	02:15 PM	75	0	96	0	0	0	0	334	57	28	199	0	789
01:30 PM	02:30 PM	63	0	75	0	0	0	0	358	53	24	183	0	756
01:45 PM	02:45 PM	53	0	59	0	0	0	0	330	54	16	149	0	661
02:00 PM	03:00 PM	38	0	57	0	0	0	0	345	49	13	143	0	645

DKS ASSOCIATES — INTERSECTION TURN MOVEMENT COUNT SUMMARY — 29-Nov-83

INTERSECTION:

STOCKTON STREET
& BEACH STREET

PROJECT: UNDERWATER WORLD, PIER 39
NUMBER: P8704Bx0
DATE: Saturday, March 21, 1987
NOTES: PM Peak Hour (3-5)

COUNT TIME
From: 3:00 PM
To: 5:00 PM

COUNT DATA

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           BEACH STREET        <-,     A     ,->                    ! \!
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                               101      0    114
                                   STOCKTON STREET
```

PEAK HOUR
From: 03:00 PM
To: 04:00 PM

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
03:00 PM	03:15 PM	25	0	22	0	0	0	0	131	41	9	49	0	277
03:15 PM	03:30 PM	18	0	34	0	0	0	0	124	30	4	41	0	251
03:30 PM	03:45 PM	25	0	25	0	0	0	0	98	25	4	31	0	208
03:45 PM	04:00 PM	33	0	33	0	0	0	0	126	26	8	27	0	253
04:00 PM	04:15 PM	13	0	26	0	0	0	0	82	16	3	32	0	172
04:15 PM	04:30 PM	17	0	25	0	0	0	0	104	23	9	30	0	208
04:30 PM	04:45 PM	23	0	14	0	0	0	0	78	20	6	11	0	152
04:45 PM	05:00 PM	13	0	10	0	0	0	0	67	14	6	18	0	128

HOUR TOTALS

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
03:00 PM	04:00 PM	101	0	114	0	0	0	0	479	122	25	148	0	989
03:15 PM	04:15 PM	89	0	118	0	0	0	0	430	97	19	131	0	884
03:30 PM	04:30 PM	88	0	109	0	0	0	0	410	90	24	120	0	841
03:45 PM	04:45 PM	86	0	98	0	0	0	0	390	85	26	100	0	785
04:00 PM	05:00 PM	66	0	75	0	0	0	0	331	73	24	91	0	660

INTERSECTION:

POWELL ST
& JEFFERSON/EMBARC.

PROJECT: UNDERWATER WORLD
NUMBER: P87048X0
DATE: OCTOBER 22, 1988
NOTES: SATURDAY MID-DAY PEAK
10:30 AM UNTIL 3:00 PM
THIS SHEET 12:30 - 3:00 PM

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                      JEFFERSON/EMBARC.  (-,      A     ,-)                  :  \:
                                    :      :      :
                                    :      :      :
                                  116     67     90
                                                POWELL ST
```

COUNT TIME
From: 12:30 PM
To: 3:00 PM

PEAK HOUR
From: 12:30 PM
To: 01:30 PM

COUNT DATA

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
12:30 PM	12:45 PM	26	15	26	0	0	0	0	0	0	79	145	26	317
12:45 PM	01:00 PM	40	21	16	0	0	0	0	0	0	57	134	27	295
01:00 PM	01:15 PM	29	13	19	0	0	0	0	0	0	65	157	21	304
01:15 PM	01:30 PM	21	18	29	0	0	0	0	0	0	34	133	24	259
01:30 PM	01:45 PM	40	30	17	0	0	0	0	0	0	20	150	22	279
01:45 PM	02:00 PM	29	20	17	0	0	0	0	0	0	16	131	16	229
02:00 PM	02:15 PM	38	17	21	0	0	0	0	0	0	24	192	13	305
02:15 PM	02:30 PM	24	18	7	0	0	0	0	0	0	18	103	16	186
02:30 PM	02:45 PM	27	19	9	0	0	0	0	0	0	23	168	19	265
02:45 PM	03:00 PM	34	13	13	0	0	0	0	0	0	27	125	26	238

HOUR TOTALS

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
12:30 PM	01:30 PM	116	67	90	0	0	0	0	0	0	235	569	98	1,175
12:45 PM	01:45 PM	130	82	81	0	0	0	0	0	0	176	574	94	1,137
01:00 PM	02:00 PM	119	81	82	0	0	0	0	0	0	135	571	83	1,071
01:15 PM	02:15 PM	128	85	84	0	0	0	0	0	0	94	606	75	1,072
01:30 PM	02:30 PM	131	85	62	0	0	0	0	0	0	78	576	67	999
01:45 PM	02:45 PM	118	74	54	0	0	0	0	0	0	81	594	64	985
02:00 PM	03:00 PM	123	67	50	0	0	0	0	0	0	92	588	74	994

DKS ASSOCIATES — INTERSECTION TURN MOVEMENT COUNT SUMMARY — 29-Nov-88

INTERSECTION:
POWELL ST
& JEFFERSON/EMBARC.

PROJECT: UNDERWATER WORLD
NUMBER: P87048X0
DATE: OCTOBER 22, 1988
NOTES: SATURDAY MID-DAY PEAK
10:30 AM UNTIL 3:00 PM
THIS SHEET 12:30 - 3:00 PM

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                0   ----'             V           :   `----    98            ||
                                   685   <---   902                          ||
                0   ----->                                  <-----   569     ||
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                0   ---->             :           A   >----   235          |\  |
                          V      235 V         273 :   V                   | \ |
                JEFFERSON/EMBARC.   <->      A    >-)                      |  \|
                                    :      :      :
                                    :      :      :
                                   116     67     90
```

COUNT TIME
From: 12:30 PM
To: 3:00 PM

PEAK HOUR
From: 12:30 PM
To: 01:30 PM

COUNT DATA — POWELL ST

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
12:30 PM	12:45 PM	26	15	26	0	0	0	0	0	0	79	145	26	317
12:45 PM	01:00 PM	40	21	16	0	0	0	0	0	0	57	134	27	295
01:00 PM	01:15 PM	29	13	19	0	0	0	0	0	0	65	157	21	304
01:15 PM	01:30 PM	21	18	29	0	0	0	0	0	0	34	133	24	259
01:30 PM	01:45 PM	40	30	17	0	0	0	0	0	0	20	150	22	279
01:45 PM	02:00 PM	29	20	17	0	0	0	0	0	0	16	131	16	229
02:00 PM	02:15 PM	38	17	21	0	0	0	0	0	0	24	192	13	305
02:15 PM	02:30 PM	24	18	7	0	0	0	0	0	0	18	103	16	186
02:30 PM	02:45 PM	27	19	9	0	0	0	0	0	0	23	168	19	265
02:45 PM	03:00 PM	34	13	13	0	0	0	0	0	0	27	125	26	238

HOUR TOTALS

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
12:30 PM	01:30 PM	116	67	90	0	0	0	0	0	0	235	569	98	1,175
12:45 PM	01:45 PM	130	82	81	0	0	0	0	0	0	176	574	94	1,137
01:00 PM	02:00 PM	119	81	82	0	0	0	0	0	0	135	571	83	1,071
01:15 PM	02:15 PM	128	85	84	0	0	0	0	0	0	94	606	75	1,072
01:30 PM	02:30 PM	131	85	62	0	0	0	0	0	0	78	576	67	999
01:45 PM	02:45 PM	118	74	54	0	0	0	0	0	0	81	594	64	985
02:00 PM	03:00 PM	123	67	50	0	0	0	0	0	0	92	588	74	994

BKS ASSOCIATES — INTERSECTION TURN MOVEMENT COUNT SUMMARY — 29-Nov-88

INTERSECTION:
POWELL ST
& JEFFERSON/EMBARC.

PROJECT: UNDERWATER WORLD
NUMBER: P87048X0
DATE: OCTOBER 22, 1988
NOTES: SATURDAY MID-DAY PEAK
10:30 AM UNTIL 3:00 PM
THIS SHEET 10:30 - 1:30

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                                   V    268 V          287 :   V            : \ :
                          JEFFERSON/EMBARC.  <->      A     <->             :  \:
```

COUNT TIME
From: 10:30 AM
To: 1:30 PM

COUNT DATA — POWELL ST

PEAK HOUR
From: 12:15 PM
To: 01:15 PM

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
10:30 AM	10:45 AM	19	26	5	0	0	0	0	0	0	44	100	22	216
10:45 AM	11:00 AM	19	25	12	0	0	0	0	0	0	38	97	23	214
11:00 AM	11:15 AM	30	29	15	0	0	0	0	0	0	44	106	22	246
11:15 AM	11:30 AM	20	27	7	0	0	0	0	0	0	74	109	35	272
11:30 AM	11:45 AM	21	26	13	0	0	0	0	0	0	66	104	26	256
11:45 AM	12:00 PM	22	21	8	0	0	0	0	0	0	50	124	28	253
12:00 PM	12:15 PM	28	18	23	0	0	0	0	0	0	73	120	20	282
12:15 PM	12:30 PM	27	21	34	0	0	0	0	0	0	67	116	19	284
12:30 PM	12:45 PM	26	15	26	0	0	0	0	0	0	79	145	26	317
12:45 PM	01:00 PM	40	21	16	0	0	0	0	0	0	57	134	27	295
01:00 PM	01:15 PM	29	13	19	0	0	0	0	0	0	65	157	21	304
01:15 PM	01:30 PM	21	18	29	0	0	0	0	0	0	34	133	24	259

HOUR TOTALS

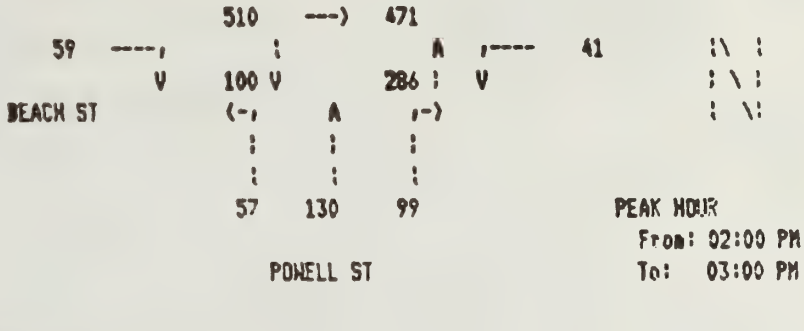
TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
10:30 AM	11:30 AM	88	107	39	0	0	0	0	0	0	200	412	102	948
10:45 AM	11:45 AM	90	107	47	0	0	0	0	0	0	222	416	106	983
11:00 AM	12:00 PM	93	103	43	0	0	0	0	0	0	234	443	111	1,027
11:15 AM	12:15 PM	91	92	51	0	0	0	0	0	0	263	457	109	1,063
11:30 AM	12:30 PM	98	86	78	0	0	0	0	0	0	256	464	93	1,075
11:45 AM	12:45 PM	103	75	91	0	0	0	0	0	0	269	505	93	1,136
12:00 PM	01:00 PM	121	75	99	0	0	0	0	0	0	276	515	92	1,178
12:15 PM	01:15 PM	122	70	95	0	0	0	0	0	0	268	552	93	1,200
12:30 PM	01:30 PM	116	67	90	0	0	0	0	0	0	235	569	98	1,175

INTERSECTION:
POWELL ST
& BEACH ST

PROJECT: UNDERWATER WORLD
NUMBER: P87048X0
DATE: OCTOBER 22, 1988
NOTES: SATURDAY MID-DAY PEAK
10:30 AM UNTIL 3:00 PM
THIS SHEET 12:30 - 3:00 PM

COUNT TIME
From: 12:30 PM
To: 3:00 PM

COUNT DATA



PEAK HOUR
From: 02:00 PM
To: 03:00 PM

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
12:30 PM	12:45 PM	12	29	16	0	0	0	6	82	4	2	24	36	211
12:45 PM	01:00 PM	6	31	23	0	0	0	19	75	11	4	27	40	236
01:00 PM	01:15 PM	19	28	28	0	0	0	18	59	6	3	26	43	230
01:15 PM	01:30 PM	9	22	15	0	0	0	23	72	12	2	21	37	213
01:30 PM	01:45 PM	19	42	21	0	0	0	15	68	10	3	33	28	239
01:45 PM	02:00 PM	16	27	29	0	0	0	24	76	20	10	41	21	264
02:00 PM	02:15 PM	9	36	23	0	0	0	19	100	21	14	41	26	289
02:15 PM	02:30 PM	20	35	20	0	0	0	18	72	13	8	27	29	233
02:30 PM	02:45 PM	10	30	26	0	0	0	15	89	10	9	17	24	230
02:45 PM	03:00 PM	18	29	30	0	0	0	27	111	15	10	37	29	306

HOUR TOTALS

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
12:30 PM	01:30 PM	46	110	82	0	0	0	66	288	33	11	98	156	890
12:45 PM	01:45 PM	53	123	87	0	0	0	75	274	39	12	107	148	913
01:00 PM	02:00 PM	63	119	93	0	0	0	80	275	48	18	121	129	946
01:15 PM	02:15 PM	53	127	88	0	0	0	81	316	63	29	136	112	1,005
01:30 PM	02:30 PM	64	140	93	0	0	0	76	316	64	35	142	95	1,025
01:45 PM	02:45 PM	55	128	98	0	0	0	76	337	64	41	126	91	1,016
02:00 PM	03:00 PM	57	130	99	0	0	0	79	372	59	41	122	99	1,058

INTERSECTION:

POWELL ST
& BEACH ST

PROJECT: UNDERWATER WORLD
NUMBER: P87048X0
DATE: OCTOBER 22, 1988
NOTES: SATURDAY MID-DAY PEAK
10:30 AM UNTIL 3:00 PM
THIS SHEET 10:30 - 1:30

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                290  -----)                     (-----   98         ::
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                 29  ----,         :           A   ,----  11      :\  :
                          V       40 V        259 :   V            : \ :
              BEACH ST           (-,     A     ,-)                 :  \:
                                    :     :     :
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                                   45   123    91
                                     POWELL ST
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COUNT TIME
From: 10:30 AM
To: 1:30 PM

PEAK HOUR
From: 12:15 PM
To: 01:15 PM

COUNT DATA

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
10:30 AM	10:45 AM	0	17	13	0	0	0	0	31	13	1	18	21	114
10:45 AM	11:00 AM	3	11	14	0	0	0	0	29	14	2	16	17	106
11:00 AM	11:15 AM	0	0	17	0	0	0	0	14	4	3	17	29	84
11:15 AM	11:30 AM	16	29	21	0	0	0	16	58	9	3	19	18	189
11:30 AM	11:45 AM	6	36	8	0	0	0	16	46	4	5	18	36	175
11:45 AM	12:00 PM	13	31	8	0	0	0	14	58	4	3	5	17	158
12:00 PM	12:15 PM	14	32	12	0	0	0	15	69	10	4	16	22	194
12:15 PM	12:30 PM	8	35	24	0	0	0	13	74	8	2	24	41	229
12:30 PM	12:45 PM	12	29	16	0	0	0	14	82	4	2	24	36	219
12:45 PM	01:00 PM	6	31	23	0	0	0	19	70	11	4	24	40	228
01:00 PM	01:15 PM	19	28	28	0	0	0	18	64	6	3	26	43	235
01:15 PM	01:30 PM	9	22	15	0	0	0	23	73	12	2	31	37	224

HOUR TOTALS

TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL VOLUME
10:30 AM	11:30 AM	19	57	65	0	0	0	16	132	40	9	70	85	493
10:45 AM	11:45 AM	25	76	60	0	0	0	32	147	31	13	70	100	554
11:00 AM	12:00 PM	40	96	54	0	0	0	46	176	21	14	59	100	606
11:15 AM	12:15 PM	54	128	49	0	0	0	61	231	27	15	58	93	716
11:30 AM	12:30 PM	46	134	52	0	0	0	58	247	26	14	63	116	756
11:45 AM	12:45 PM	52	127	60	0	0	0	56	283	26	11	69	116	800
12:00 PM	01:00 PM	40	127	75	0	0	0	61	295	33	12	88	139	870
12:15 PM	01:15 PM	45	123	91	0	0	0	64	290	29	11	98	160	911
12:30 PM	01:30 PM	46	110	82	0	0	0	74	289	33	11	105	156	906

Date: June 1, 1989

ADDENDUM TO SUMMARY OF COMMENTS AND RESPONSES FOR UNDERWATER WORLD AQUARIUM AT PIER 39 (86.674E)

The following revisions are made to the Summary of Comments and Responses for Underwater World at Pier 39 (86.674E). None of these changes would result in substantial changes to the impacts analyses presented in the Draft EIR ("DEIR"). Revisions to the DEIR text made in the Summary of Comments and Responses remain underlined; additions and/or revisions made in this Addendum are placed in brackets.

1. On page C & R 23, the amended text to be inserted in the third sentence of the last paragraph on page 70 of the DEIR is revised to read as follows:

> "About 18 boat slips in the marina [(of which 16 are leasable)] would be removed and [the lessees of the slips to be removed would be offered the option of either relocating to one] of the approximately 50 vacant slips in the Pier 39 marina [or transferring their leasehold interest to the Pier 39 Limited Partnership at prevailing market rates.] During pile driving and foundation work, there would be a temporary displacement of from 12 to 29 additional boat slips to accommodate construction equipment and activities."

2. On page C & R 34, the last paragraph is revised to read as follows:

> "In combination, the above described measures are intended by the project sponsor to satisfy BCDC's mitigation requirements. [In addition, since publication of the DEIR, the project design has been revised to include a second story public promenade with view decks along the northeastern side of the proposed building and a Bay view exhibit within the proposed structure (see page C & R 261).] The final determination of the adequacy of the project's public

access will be made by BCDC when it considers the project. For a discussion of the public access requirements of BCDC Permit 22-76, see pages C & R 235 to 239."

3. In order to correct an error in the Summary of Comments and Responses, the last paragraph on page C & R page 75 as continued on page C & R 76 is revised as follows:

> "The project's hourly capacity would depend on the number of people that could be accommodated in the moving walkway which would revolve under the aquarium. The [moving] walkway would be [three] feet wide by about [400] feet long, and would make [about seven] revolutions per hour (a rate of [47] feet per minute, or [0.8] feet per second). Assuming six square feet per person on the walkway, [1,400] people could be accommodated per hour. [However, based on experience at the Underwater World facility in New Zealand, each visitor to the aquarium would be expected to remain in the tank area for approximately 25 minutes. This average length of stay leads to a maximum capacity for the facility of 960 visitors.] A capacity of 900 visitors per hour was used [as a maximum reasonable capacity]. To handle 2,500 people per hour, the facility would require [almost doubling the speed of the walkway, forcing patrons on the stationary platform to walk at the same speed and direction as patrons standing on the moveable walkway, reducing the allocated space per person almost in half or some combination of these measures.] Most patrons would find [any of] these conditions unacceptable, [and the project sponsor is not willing to operate the facility in such fashion]. The project would not operate at a capacity greater than 900 visitors per hour. This is called out as a mitigation measure in this EIR. It would be a Condition of Approval."

4. In order to consolidate information contained in the Summary of Comments and Responses regarding open space calculations, the third paragraph on page C & R 264 is revised and a new paragraph is added to read as follows: (This response changes the first paragraph of DEIR page 17.)

["Within the 51,400 square foot delineated site coverage area as shown in Figures 21A and 21B of the DEIR], the proposed project would result in the net loss of approximately 1,100 square foot of [ground level] landscaping and 3,600 square feet of [ground level] pedestrian pavement and in the net addition of 1,800 square feet of [ground level] covered open space and 600 square feet of [ground level] roadway which would extend around the entire Pier 39 development (see Table 6). [The proposed project would also result in the net addition of approximately 7,000 square feet of second level public promenade with view decks along the northeastern side of the building. See Figure C & R 28 on page C & R 259."]

["In addition to the changes in site coverage described above, the proposed project could result in changes in site coverage outside the 51,400 square foot area designated in Figures 21A and 21B. With the inclusion of the mitigation measures for transportation as described on pages 144-146 of the DEIR as modified by pages C & R 128-129, 154-162 and this Addendum, there could either be a net addition of approximately 6,000 square feet of ground level pedestrian pavement and landscaped open space near the project site through the conversion of the existing tour bus/taxi loading area or a net loss of approximately 5,400 square feet of existing open space through the extension of the existing tour bus/taxi loading area. In addition, there would be a net loss of approximately 3,000 to 6,000 square feet (depending on the alternative) of ground level open space area contained in Seawall Lot 312."]

5. The last sentence of the first paragraph under the heading "Land Use" on page C & R 274 is revised as follows:

(This response changes the last paragraph of DEIR page 70.)

"About eighteen boat slips in the marina [(of which 16 are leasable)] would be removed [and the lessees of the slips to be removed would be offered the option of either relocating] to one of the approximately 50 vacant slips in the Pier 39 marina [or transferring their leasehold interest to the Pier 39 Limited Partnership at prevailing market rates]. See Table 1 and Table 3."

6. In order to consolidate information contained in the Summary of Comments and Responses regarding open space calculations, the last paragraph on page C & R 274 as continued on page C & R 275 is revised and reorganized as follows: (This response changes the third paragraph of DEIR page 71.)

> ["Within the 51,400 square foot delineated site coverage area as shown in Figures 21A and 21B of the DEIR], the proposed project would result in the net loss of approximately 1,100 square foot of [ground level] landscaping and 3,600 square feet of [ground level] pedestrian pavement and in the net addition of 1,800 square feet of [ground level] covered open space and 600 square feet of [ground level] roadway which would extend around the entire Pier 39 development. [The proposed project would also result in the net addition of approximately 7,000 square feet of second level public promenade with view decks along the northeastern side of the building.] Table 6 summarizes the changes in intensity of open space land adjacent to Pier 39 [within the delineated site coverage area]. Figures 21A and 21B show these changes graphically. The perimeter access road/pedestrian walkway would be relocated around the new construction.
>
> The project sponsor proposes to mitigate this impact by improving the resulting open space and other Pier 39 open space. These improvements could include: 1) Installation of protected pedestrian overlooks, cantilevered overwater from the existing and relocated perimeter walk/roadway. These pedestrian overlooks would include benches, viewfinders, special low night lights, and special displays on the content of the important visual landmarks, and other pedestrian amenities; 2) Protecting the pedestrian space from vehicles at the north end of the Pier by the installation of bollards; and 3) Expansion of the open deck on the second floor, including a public promenade with view decks running along the northeastern side of the building that would provide new views of the Pier 39 marina and the Bay.

7. On page C & R 277, the fourth paragraph is amended to provide that the clarification on page 144 of the DEIR, second bulleted item, is reorganized as follows:

"Construction activity at the project site which could result in transportation impacts would be limited to the 9:00 A.M. to 3:30 P.M. time period to help reduce impacts on peak traffic flow."

8. The paragraph on page C & R 278 is revised to read as follows:

["Some or all of these proposed mitigation measures may be required as conditions of approval by the City; some or all may be required as conditions as approval by BCDC under its jurisdiction. Within 30 days after compliance with the condition is required pursuant to the mitigation measures imposed as conditions of approval, the project sponsor would submit a report to the agency imposing the condition detailing the implementation of such mitigation measures, with a copy to the other agency."]

9. In order to consolidate changes made in the Summary of Comments and Responses and to reflect ongoing discussions between the project sponsor, City staff and the Fisherman's Wharf Citizen Advisory Committee pertaining to the revised access to the Pier 39 Garage, accomodation of additional tour bus and taxi loading area and related circulation issues, the last paragraph on page C & R 154 is revised as follows: Revisions to the DEIR and Summary of Comments and Responses appear in brackets.

"Since publication of the DEIR, [discussion has continued] on a recommended new access plan for the Pier 39 Garage. The full text beginning with the first full paragraph on page 144 of the DEIR and ending before the first full paragraph on page 146 of the DEIR is presented here, incorporating changes made on pages C & R 128-129, 154-156, 185 and 277.

With traffic signals installed at Powell/Beach, Embarcadero/Beach, Embarcadero/North Point, and Stockton/Beach (in the case of Pier 39 garage traffic exiting at Stockton), acceptable levels of service could be maintained (LOS "D" or better) at all study

area intersections with future development and the F-line extension.

The existing primary ingress route via The Embarcadero with a left turn on to the counter-flow lane on Powell Street would be eliminated. A new primary entrance with three entry ticket booths would be established at the east end of the garage adjacent to Stockton Street. This new primary entrance would be accessed via a portal opening [from] The Embarcadero at the eastern tip of Seawall Lot 312 [or from Beach Street].

The existing open space between Stockton and this new entry portal would be changed to provide three garage queue lanes and a passenger loading area for a shuttle bus to the 80 Francisco Garage, with landscaping on the north and south sides of Seawall Lot 312. This area would also be designed to accommodate space for an F-line streetcar emergency turnback storage loop. Design of the new primary entrance and queueing area [c]ould also include reconfiguration of the adjacent Embarcadero with an expanded tour bus/taxi passenger loading area as described on pages C & R [128-129, or retention of the basic existing configuration with redesign of The Embarcadero/Beach intersection to clarify movements. The existing secondary ingress route via a left turn from The Embarcadero to Beach Street with a right turn onto Powell Street would be retained as well as a queue lane adjacent to the north curb of Beach Street east of Powell Street.

The existing garage exit onto Powell Street would be retained, but the existing concrete median on Powell Street would be modified north of the garage exit to allow all movements at the Embarcadero/ Jefferson/Powell intersection [or a new Beach Street entry/exit would replace Powell Street as a secondary entry.] [As shown on Figure 32A, if the existing garage exit on Powell were maintained] the existing single southbound Embarcadero lane east of Powell Street would be terminated at Stockton Street, with this traffic diverted southbound onto Stockton Street, [or could continue to the intersection of Beach/Embarcadero as it does now, with modification of the intersection to clarify movements. Under the Beach Street entry/exit variation, the single southbound lane on The Embarcadero would be eliminated, and exiting from the Pier 39 garage would be on Beach Street, with secondary egress to

Stockton.] New traffic signals would be installed at the Beach/Stockton intersection and The Embarcadero/Beach intersection and the existing traffic signal on The Embarcadero for pedestrians and its associated pedestrian crosswalk would be relocated to the east side of The Embarcadero/Stockton intersection, all at the project sponsor's expense.

The new primary garage entrance [at Stockton] would be supported by a series of parking directional signs along The Embarcadero as well as with an overhead sign at its portal. The overhead portal sign would include variable messages to reinforce a queue management strategy designed to ensure that no Pier 39 Garage queueing would extend on The Embarcadero. Weekend and holiday overflow parking at the 80 Francisco Garage would be accessed via Stockton, Powell, [Kearny or The Embarcadero, to Bay Street or Francisco Street]. The queue management strategy would incorporate the following operating procedures:

Stage 1: Garage traffic would be directed to the primary entrance, with the secondary entrance also available. This condition would prevail on normal weekdays and at other times when the Pier 39 Garage is not effectively full.

Stage 2: Entry booths at the primary entrance would be closed using physical barriers when the Pier 39 Garage is effectively full (90% occupancy). The variable message sign would direct patrons to use Beach Street for access [to the garage] [and other garages]. The portal and Seawall Lot 312 queue area would remain open, but garage staff would direct patrons to either use Beach Street or the 80 Francisco Garage overflow parking facility.

Stage 3: If the Beach Street queue extends to [Stockton Street], the variable message sign would be changed to direct motorists to the 80 Francisco Garage overflow parking facility only. Directional flyers would be distributed by garage staff which show how to reach [other garages along Beach Street or] the 80 Francisco Garage overflow parking facility.

Stage 4: If the queueing extends to the eastern edge of the Seawall Lot 312 queue area, vehicle loop detectors would activate a gate which would close access at the portal. Throughout the period during which the primary portal is closed, all garage patrons would be directed to [other garages along Beach Street or] the 80 Francisco Garage overflow parking facility.

Stage 5: After queues have dissipated at the primary entry as determined by vehicle loop detectors in the queue area immediately east of Stockton Street, the portal gate would be reopened but garage staff would continue to direct patrons to use either Beach Street [to other garages] or the 80 Francisco Garage overflow parking facility.

Stage 6: When occupancy at the Pier 39 Garage falls below 90%, the entry booths at the primary entrance would be reopened and the variable message signs would be changed to direct patrons to the primary entrance. This dynamic queue management strategy would be reactivated, as necessary, as indicated conditions recur.

o Before the issuance of occupancy permits for the project, the project sponsor would submit a report to the Department of City Planning showing that the required alterations to the garage have been carried out.

o [As an alternative to changes in circulation around and access to the Pier 39 garage described above] the project sponsor could enforce a policy of "waving off" drivers waiting to enter the Pier 39 garage once the garage fills on weekends, by closing the entrance to the garage (with cones, rope, or similar means) and directing drivers to additional parking [west and] at the 80 Francisco Street garage. The queue for the Pier 39 parking garage currently extends along The Embarcadero on weekends during the tourist season, which impedes traffic flow and roadway capacity. Other garages in the Northern Waterfront (e.g., Ghirardelli Square and The Anchorage) do not experience on-street queueing. A "wave-off" policy would eliminate on-street queueing at Pier 39. Visitors likely would be able to reach available parking and hence the proposed project in less time if

directed to the 80 Francisco Street garage [or other garages to the west] than if allowed to queue along The Embarcadero, which at peak times results in 10 to 20 minute delays.

Potential measures which would help to direct drivers to additional parking [at other garages or] at 80 Francisco Street include modifying the existing Pier 39 garage sign at the corner of The Embarcadero/Beach, placing sandwich boards along The Embarcadero and Sansome Street directing drivers to the 80 Francisco Street garage, and supplying traffic/parking control personnel to direct people to additional parking (similar to the system used at Jack London Waterfront in Oakland). The project sponsor could post signs or use similar informational aids to direct visitors to the project site from 80 Francisco garage. Pedestrians could be directed north on Kearny Street to North Point Street, and from there along the west side of The Embarcadero past Beach Street to the existing signalized pedestrian crossing north of Beach Street leading to Pier 39. The distance from the 80 Francisco garage to Pier 39 is approximately 1,500 feet, which is about 400 feet greater than the length of Pier 39.

Before the issuance of occupancy permits for the project, the project sponsor would submit a report to the Department of City Planning describing a proposed garage management plan. This plan would be subject to periodic review and approval by the Department of City Planning.

- Construction activity at the project site which could result in transportation impacts would be limited to the 9:00 A.M. to 3:30 P.M. time period to help reduce impacts on peak traffic flow.

- The project sponsor would establish an effective Transportation Systems Management (TSM) program oriented to increase visitor and employee use of transit, subject to review and approval by the Director of City Planning.

- [In order to mitigate potential tour bus and passenger loading impacts, the project sponsor has agreed to implement any of the following mitigation measures which are within its control.] The project sponsor could provide additional areas for bus and passenger loading. Several potential locations were considered which could provide additional loading

areas. (Figure 34, page 145) The existing Pier 39 bus loading area could be extended by approximately 200 feet to the west along The Embarcadero to accommodate the additional loading demand of the project. A second potential site for additional loading area would be east of the project site adjacent to The Embarcadero. This site would not be within the control of the project sponsor. A third potential site for additional bus loading space is the Powell/Jefferson/Embarcadero intersection. Several improvements could be proposed for this intersection by the Department of City Planning and Department of Public Works. As part of these improvements, additional bus loading area could be provided on The Embarcadero immediately north of the intersection. Pedicab operators who would be displaced by additional bus loading space could be relocated immediately north of their current location, where they would be favorably positioned to meet disembarking passengers. Excess parking could be removed from this area, a curb line delineated, and pedestrian circulation routes defined, which would serve to provide Wharf visitors with a sense of direction as they continue walking west from Pier 39. Piers 35 and 45 could potentially provide additional tour bus loading areas. These locations would be less desirable, however, due to greater distances from the project site and competing uses for waterfront area which would tend to make use of the Piers for additional loading space not viable. [Some] of these potential bus loading areas would result in a loss of open space, and [some] would need to be approved by the Bay Conservation and Development Commission.

[Another potential location would be in The Embarcadero.] The existing tour bus area north of The Embarcadero [c]ould be removed and the area converted to open space. The position of The Embarcadero would be shifted to the south into a portion of Seawall Lot 312. Between Beach and Stockton Streets, the new cross-section of The Embarcadero from north to south would be as follows: 13 feet exclusive F-line right-of-way; 8 feet raised passenger island for tour buses and taxis; 10 feet dwell lane to be used by tour buses and taxis for delivery and pickup of passengers; two 11-foot northbound travel lanes. With this plan, tour buses and taxis would continue to approach Pier 39 northbound on The Embarcadero and, after completing passenger alighting or boarding activities at the new and expanded passenger loading area, would proceed along The Embarcadero. Tour buses and taxis would not

cross the exclusive F-line streetcar right-of-way situated at the north curb of The Embarcadero. The realigned Embarcadero would preserve the same level of accessibility to other Fisherman's Wharf businesses which presently exists. This plan would require actions by the Department of Public Works [as well as by the project sponsor.]

Before the issuance of occupancy permits for the project, the sponsor would submit a report to the Department of City Planning showing that [the implementation of the mitigation measure imposed by the City Planning Commission] was complete.

10. For ease of reading a section of the DEIR substantially revised by the Summary of Comments and Responses, the full text of page 147 of the DEIR concerning "Water Quality and Marine Biology" is presented here as revised by the responses on pages C & R 198, 200, 202, and 209:

"MEASURES PROPOSED TO BE INCLUDED IN THE PROJECT

- The project sponsor, prior to initiation of project construction, would require the general contractor to prepare a plan for the storage of hazardous materials and for their clean-up in the event that a spill should occur.

- Only aquatic species native to Northern California Pacific and Bay Waters would be contained in the aquarium.

- In order to avoid health hazards associated with the use of ozone, the project would employ standard operating procedures for ozone production and handling, including a complete system of ozone generation, ozone destruction, and ozone monitoring.

- Discharge backwash from recirculating filters to City sewer.

- Before a discharge permit would be issued by the Regional Water Quality Control Board, the RWQCB may require bioassays using Regional Water Quality Control Board approved test animals to determine an acceptable

concentration of Dylox in the discharged effluent. These test animals include those commonly found in the Bay, some of which would probably be placed in the proposed aquarium. Dylox-treated water would then be held in the aquarium tank for sufficient time for its concentration to decline to the level determined by the Regional Water Quality Control Board as a result of these tests to be acceptable. While this is the most likely approach to assuring that harmful amounts of Dylox would not enter the Bay, other methods, such as using a charcoal filter system would also be available, and could be required by the Regional Water Quality Control Board."

ADDENDUM #2 TO THE DRAFT SUMMARY OF COMMENTS AND RESPONSES
JULY 13, 1989

TRANSPORTATION

New Proposed Garage Access Configurations. Since the preparation of the Summary of Comments and Responses, additional work has been done, by staff, the Citizens Advisory Committee, and the sponsor, on the proposed garage circulation scheme. The CAC developed an alternative garage circulation scheme in late June, and a revised CAC scheme was presented at a CAC meeting on July 5 and was presented to the Commission on July 6. An analysis of these two different approaches to improving garage circulation is added to the Draft Summary of Comments and Responses as follows.

Revise the response beginning with the last paragraph on page C&R 154 as follows (changes are underlined):

> Since the publication of the DEIR, discussion has continued on a recommended new access plan for the Pier 39 Garage. The full text beginning with the first full paragraph on page 144 of the DEIR and ending before the first full paragraph on page 146 of the DEIR is presented here incorporating changes made on pages C&R 128-129, 154-156, 185 and 277, and in the first Addendum.
>
> With traffic signals installed at Powell/Beach, Embarcadero/Beach, Embarcadero/North Point, and Stockton/Beach (in the case of Pier 39 garage traffic exiting at Stockton), acceptable levels of service could be maintained (LOS "D" or better) at all study area intersections with future development and the F-line extension.
>
> In April 1989, the project sponsor and Department staff proposed a garage access plan which is described as follows: The existing primary ingress route via The Embarcadero with a left turn on to the counter-flow lane on Powell Street would be eliminated. A new primary entrance with three entry ticket booths would be established at the east end of the garage adjacent to Stockton Street. This new primary entrance would be accessed via a portal opening from The Embarcadero at the eastern tip of Seawall Lot 312 or from Beach Street.
>
> The existing open space between Stockton and this new entry portal would be changed to provide three garage queue lanes and a passenger loading area for a shuttle bus to the 80 Francisco Garage, with landscaping on the north and south sides of Seawall Lot 312. This area would also be designed to accommodate space for an F-line streetcar emergency turnback storage loop. Design of the new primary entrance and queueing area could also include reconfiguration of the adjacent Embarcadero with an expanded tour bus/taxi passenger loading area as described on pages C & R 128-129, or retention of the basic existing configuration with redesign of the Embarcadero/Beach intersection to clarify movements. The existing

secondary ingress route via a left turn from The Embarcadero to Beach Street with a right turn onto Powell Street would be retained as well as a queue lane adjacent to the north curb of Beach Street east of Powell Street.

The existing garage exit onto Powell Street would be retained, but the existing concrete median on Powell Street would be modified north of the garage exit to allow all movements at the Embarcadero/Jefferson/Powell intersection or a new Beach Street entry/exit would replace Powell Street as a secondary entry. As shown on Figure 32A, if the existing garage exit on Powell were maintained the existing single southbound Embarcadero lane east of Powell Street would be terminated at Stockton Street, with this traffic diverted southbound onto Stockton Street, or could continue to the intersection of Beach/Embarcadero as it does now, with modification of the intersection to clarify movements. Under the Beach Street entry/exit variation, the single southbound lane on The Embarcadero would be eliminated, and exiting from the Pier 39 garage would be on Beach Street, with secondary egress to Stockton. New traffic signals would be installed at the Beach/Stockton intersection and The Embarcadero/Beach intersection and the existing traffic signal on The Embarcadero for pedestrians and its associated pedestrian crosswalk would be relocated to the east side of The Embarcadero/Stockton intersection, all at the project sponsor's expense.

The new primary garage entrance at Stockton would be supported by a series of parking directional signs along The Embarcadero as well as with an overhead sign at its portal. The overhead portal sign would include variable messages to reinforce a queue management strategy designed to ensure that no Pier 39 Garage queueing would extend onto The Embarcadero. Weekend and holiday overflow parking at the 80 Francisco Garage would be accessed via Stockton, Powell, Kearny or The Embarcadero, to Bay Street or Francisco Street. The queue management strategy would incorporate the following operating procedures:

Stage 1: Garage traffic would be directed to the primary entrance, with the secondary entrance also available. This condition would prevail on normal weekdays and at other times when the Pier 39 Garage is not effectively full.

Stage 2: Entry booths at the primary entrance would be closed using physical barriers when the Pier 39 Garage is effectively full (90% occupancy). The variable message sign would direct patrons to use Beach Street for access to the garage and other garages. The portal and Seawall Lot 312 queue area would remain open, but garage staff would direct patrons to either use Beach Street or the 80 Francisco Garage overflow parking facility.

Stage 3: If the Beach Street queue extends to Stockton Street, the variable message sign would be changed to direct motorists to the 80 Francisco Garage overflow parking facility only. Directional flyers would be distributed by garage staff which show how to reach other garages along Beach Street or the 80 Francisco Garage overflow parking facility.

Stage 4: If the queueing extends to the eastern edge of the Seawall Lot 312 queue area, vehicle loop detectors would activate a gate which would close access at the portal. Throughout the period during which the primary portal is closed, all garage patrons would be directed to other garages along Beach Street or the 80 Francisco Garage overflow parking facility.

Stage 5: After queues have dissipated at the primary entry as determined by vehicle loop detectors in the queue area immediately east of Stockton Street, the portal gate would be reopened but garage staff would continue to direct patrons to use either Beach Street to other garages or the 80 Francisco Garage overflow parking facility.

Stage 6: When occupancy at the Pier 39 Garage falls below 90%, the entry booths at the primary entrance would be reopened and the variable message signs would be changed to direct patrons to the primary entrance. This dynamic queue management strategy would be reactivated, as necessary, as indicated conditions recur.

- Before the issuance of occupancy permits for the project, the project sponsor would submit a report to the Department of city Planning showing that the required alterations to the garage have been carried out.

Since the preparation of the Summary of Comments and Responses, additional work has been done, by staff, the Citizens Advisory Committee, and the sponsor, on the proposed garage circulation scheme. The CAC developed an alternative garage circulation scheme in late June, and a revised CAC scheme was presented at a CAC meeting on July 5 and was presented to the Commission on July 6. An analysis of these two different approaches to improving garage circulation is added to the EIR as follows:

Original CAC Alternative

The Original CAC Alternative (shown in Figures 31E and 32B) differs from the Staff/Sponsor Preferred Alternative in the following ways:

No south/eastbound traffic is provided on The Embarcadero between Powell and Beach Streets;

Powell Street is two-way between Jefferson and Beach Streets;

Left turns are allowed from westbound The Embarcadero to southbound Powell Street;

The Embarcadero is one-way west/northbound from Beach to Powell Street;

No garage access is permitted on Powell Street;

A garage access point is provided on Beach Street just east of Powell;

Off-peak access to the garage from The Embarcadero to the new Stockton access point would be provided east of the relocated crosswalk. The access would be closed between 11AM and 6PM for all weekend days and holidays;

Both garage access points (on Beach and at Stockton) allow both ins and outs; and

The access for the new Stockton inbound garage stacking area has been relocated just west of the Beach/Embarcadero intersection.

The criteria used in reviewing circulation alternatives was studied for the CAC Alternative and is summarized below.

Level of Service: Table 17 of the EIR (also shown in the Comments and Responses document on page C&R.159) has been amended to reflect future levels of service under the original CAC Alternative. The table reflects cumulative weekend PM peak hour conditions. Traffic conditions at Powell/Beach and Stockton/Beach are all worse with the original CAC Alternative than any of the alternatives studied. The primary traffic problems are caused by concentration of traffic at the Beach/Powell intersection, since Beach provides the only eastbound lane from the waterfront area and concentration of all garage access onto Beach Street without any use of The Embarcadero for exiting traffic.

Garage Access: Ingress to the Pier 39 garage would be focused on Beach Street; however, access from The Embarcadero is being added during non-peak hours. Vehicles could access the garage from three different points, but only one location would have adequate off-street stacking. The multiple ingress points would create confusion for drivers, resulting in on-street queueing during peak conditions if manual traffic control is not utilized. Egress from the garage would also be focused on Beach Street. During non-peak conditions, this would provide a direct route to The Embarcadero or other streets away from the Northern Waterfront. However, during peak conditions, Beach Street would become more congested, resulting in vehicle delays. Auto queues generated with these delays would be compounded due to the multiple parking access driveways on Beach Street with the proposed circulation changes. This queueing would not occur to the same extent with schemes which provide an additional egress route via The Embarcadero (as is provided today).

On-Street Parking: As with all schemes, some on-street parking would be removed. There would be no on-street parking on Beach Street from Powell Street to The Embarcadero (nine spaces lost). Parking on Powell Street south of The Embarcadero could be added.

Pedestrian Circulation/Safety: By allowing left turns from The Embarcadero onto Powell Street, conflicts between vehicles and pedestrians are significantly increased compared to other alternatives. This conflict exists today and could increase with the original CAC Alternative. An all walk pedestrian phase has been assumed in analysis to reduce this impact. The original CAC access plan increases pedestrian exposure to conflicts with vehicles along Beach street due to three new crossings of the sidewalk. However, the pedestrian flows along the north side of Beach Street are typically low, which limits the number of pedestrian/vehicle conflicts.

Off-Street Garage Stacking: The off-street stacking area off Beach Street at the new Stockton access point provides more stacking area than any alternative except the Preferred Alternative presented in the Response to comments document (pages C&R.154-162). The original CAC Alternative plans to stack cars on Beach Street for access to the secondary entrance off Beach Street, which would be on public streets.

Traffic/F-Line Conflicts: The original CAC Alternative modifies the Preferred Alternative in that the exclusive F-Line lane has been moved to the west side of the existing bus/passenger loading area. Bus and truck traffic will cross the F-Line tracks as they access the expanded passenger loading zone. The project sponsor has agreed to provide traffic control personnel to minimize the possible conflict between passenger loading zone activities and the F-Line. Concentration of traffic on Beach Street approaching The Embarcadero will increase potential conflicts between vehicles and the F-Line as the streetcar goes to mixed flow operation on The Embarcadero southbound between Beach and North Point Streets.

Access to Remote Parking: The original CAC Alternative relies on Beach Street as a key route to redirect traffic to remote parking areas. The secondary route for directing traffic to remote parking would be North Point Street. This differs from the Preferred Alternative which utilized North Point and Bay Streets via Powell and Stockton Streets.

Embarcadero Through Lane Capacity: Through lane capacity on The Embarcadero would be similar to all alternatives and comparable to current conditions, with two through lanes. By allowing left turns from The Embarcadero onto Powell Street, some queueing would occur due to pedestrian conflicts. This would be similar to the conflict which presently occurs at Mason Street. The third lane on The Embarcadero would be used for queueing of left turning vehicles, similar to today. The greatest change in through capacity for The Embarcadero is the removal of southbound traffic which is served today by one lane.

Internal Garage Circulation: The original CAC Alternative modifies internal garage access substantially. Presently, exiting vehicles proceed straight down the internal garage ramp to a wide internal stacking area exiting on Powell Street. The original CAC Alternative would require all traffic to turn left at the bottom of the internal ramp toward Beach Street where a new stacking area would need to be developed. Additionally, any traffic exiting to the new Stockton Street access must cross this stacking area, resulting in internal conflicts and potential queueing in the garage. This is less desirable internal circulation than the alternatives with a Powell street exit. Once at the Stockton Street exit, there is little space for stacking between the garage exit and Powell Street, only allowing about four vehicles to discharge at a time with the proposed signal at Stockton/Beach.

Revised CAC Alternative

The Revised CAC Alternative is similar to the original CAC Alternative described above with the following changes (see Figures 31F and 32C):

Primary exit is located on The Embarcadero east of Powell Street;

The Embarcadero is two-way from the proposed exit to Beach Street;

Garage access on Beach Street is only a secondary entrance;

The off-peak ingress to the garage from The Embarcadero would be at the new primary exit point.

Level of Service; Traffic conditions for this alternative are summarized in Table 17. Traffic operation is better or the same with the Revised CAC Alternative than the original CAC Alternative at every intersection except one. Levels of service would be comparable to the original five alternatives studied. Only the intersection of Beach/Embarcadero would not operate better with the Revised CAC Alternative compared to the original CAC Alternative. This change is due to allowing Pier 39 traffic to exit onto The Embarcadero southbound. The concentration of Pier 39 garage traffic on Beach Street would be reduced with the Revised CAC Alternative

Garage Access: Ingress to the garage would be similar to the original CAC Alternative, except The Embarcadero "slow day" access would be moved northward to the proposed primary exit. Egress would be focused on The Embarcadero southbound, as it is today. Additionally, a secondary exit point would be provided at the proposed Stockton Street entrance. Access would be very visible to drivers, simple to understand and the exit condition would be relatively unchanged compared to today.

On-Street Parking: On-street parking would be similar to the original CAC Alternative in that all on-street parking along Beach Street from The Embarcadero to Powell Street would be removed. Parking on Powell Street from Beach Street to The Embarcadero could be added.

Pedestrian Circulation/Safety: The provision of left turns from The Embarcadero onto Powell Street conflicts with pedestrian flows, as in the original CAC Alternative. However, the Revised CAC Alternative reduces pedestrian/auto conflicts on Beach Street by eliminating the primary exit onto Beach Street and reducing the size of the Beach Street garage access point to one lane. The proposed primary garage exit onto The Embarcadero crosses a sidewalk which carries low volumes of pedestrian traffic, limiting the number of potential pedestrian/vehicle conflicts, and eliminates existing conflicts between pedestrians and Pier 39 garage egress traffic at The Embarcadero/Powell/Jefferson intersection.

Off-Street Garage Stacking: The Revised CAC Alternative is the same as the original CAC Alternative, which provides a substantial increase in stacking area compared to other alternatives and compared to existing conditions.

Traffic/F-Line Conflicts: The Revised CAC Alternative is similar to the original CAC Alternative; however, the conflicts of added egress traffic from Beach to The Embarcadero are reduced significantly with the proposed Pier 39 garage exit onto The Embarcadero.

Access to Remote Parking: Remote parking access would be the same as the original CAC Alternative.

Embarcadero Through Lane Capacity: This would effectively be the same as the original CAC Alternative, which is comparable to all other alternatives and similar to current conditions. The southbound capacity on The Embarcadero would be retained with one lane.

Internal Garage Circulation: Internal garage circulation is substantially improved over the original CAC Alternative. Major conflicts of internal traffic have been removed with entering traffic separated from exiting traffic. A new internal stacking area would need to be developed for The Embarcadero exit. The problems of stacking at the Stockton/Beach exit signal would be minimized, since this would be a minor or secondary exit point. Exiting traffic circulation is only slightly less desirable than with a Powell Street exit which does not require any turn movements at the foot of the internal ramp.

New Figures 31E are 32B are added to illustrate the internal and external circulation resulting from the original CAC scheme, and new Figures 31F and 32C are added illustrating the revised CAC alternative. A revised Table 17 is added to show the future Levels of Service under each of the CAC schemes.

In general, all intersections would operate at the same level of service as would be expected with the staff/sponsor preferred alternative presented on page C&R-159 of the Summary of Comments and Responses, with the following exceptions. With the original CAC alternative, the intersection of Powell/Jefferson/The Embarcadero, which would operate at LOS B (instead of LOS A with the staff/sponsor alternative), and Powell/Beach, which, if signalized, would operate at LOS D (instead of LOS C with the staff/sponsor alternative). With the Revised CAC Alternative, all intersections would operate at the same level of service as with the staff/sponsor preferred alternative presented in the Comments and Responses, except Powell/Jefferson/The Embarcadero would operate at LOS B (instead of LOS A with the staff/sponsor alternative), Powell/Beach (signalized) would operate at LOS D (instead of LOS C with the staff/sponsor alternative), and Beach/Embarcadero which would operate at LOS C (instead of LOS B with the staff/sponsor alternative). This analysis assumes traffic generated by cumulative development and by the proposed project.

Remote Parking

The second full paragraph on page 136 of the EIR is revised to add the following:

Alternatively, sponsor could make similar arrangements at another existing facility in Levi's Plaza or the area generally north of Vallejo Street and east of Telegraph Hill. This redirection of traffic reduces impacts on Kearny Street, but does increase impacts along North Point Street during certain peak periods. The levels of service at two study intersections would be slightly affected compared to the conditions with an 80 Francisco remote garage. Additional traffic on North Point Street would impact the North Point/Embarcadero intersection, and less traffic on Kearny would improve conditions at Kearny/Bay compared to the 80 Francisco plan. Table 17 includes this evaluation of both CAC alternatives with remote parking in the Levi's Plaza area.

TABLE 17

LEVEL-OF-SERVICE COMPARISON
PIER 39 EXTERNAL GARAGE CIRCULATION SCHEMES

Intersection	CIRCULATION ALTERNATIVE[1] Level-of-Service (Volume-to-Capacity Ratio) 1	2	3	4	5	Staff/ Sponsor Preferred Alternative	Original CAC Alternative*	Original CAC Alternative W/ new remote**	Revised CAC Alternative*	Revised CAC Alternative W/ new remote**
Powell/Jefferson/ The Embarcadero	B (0.66)	C (0.75)	B (0.66)	B (0.66)	C (0.75)	A (0.56)	B(0.64)	B(0.64)	B(0.64)	B(0.64)
Powell/Beach (with existing 3-way stop)	F (1.19)	F (1.17)	F (1.18)	F (1.21)	F (1.17)	F (1.17)	F(1.21)	F(1.21)	F(1.19)	F(1.19)
Powell/Beach (with 2-phase signal)	C (0.79)	C (0.77)	D (0.80)	D (0.81)	C (0.79)	C (0.78)	D(0.85)	D(0.85)	D(0.81)	D(0.82)
Stockton/Beach (with existing N/B stop)	N/A	N/A	N/A	A/E	A/C	N/A	N/A	N/A	N/A	N/A
Stockton/Beach (with split-phase signal)	B (0.69)	B (0.69)	C (0.74)	N/A	N/A	C (0.70)	C(0.78)	C(0.78)	C(0.73)	C(0.73)
Embarcadero/Beach (with split-phase signal)	B (0.68)	B (0.68)	B (0.68)	D (0.81)	D (0.85)	B (0.68)	B(0.68)	B(0.68)	C(0.80)	C(0.80)
Embarcadero/North Point (with split-phase signal)	D (0.83)	D (0.84)	C (0.78)	C (0.72)	C (0.75)	C (0.75)	C(0.73)	C(0.74)	C(0.73)	C(0.74)
Kearny/Bay	B (0.65)	B (0.65)	B (0.66)	B (0.65)	B (0.65)	B (0.65)	B(0.65)	B(0.62)	B(0.65)	B(0.62)
Embarcadero/Bay	C (0.77)	C (0.76)	C (0.75)	C (0.76)	C (0.75)	C (0.75)	C(0.76)	C(0.76)	C(0.76)	C(0.76)
Kearny/Francisco	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A

[1]See Figures 31, 32, and 32A for illustrations of circulation alternatives.

N/A - Not Applicable.

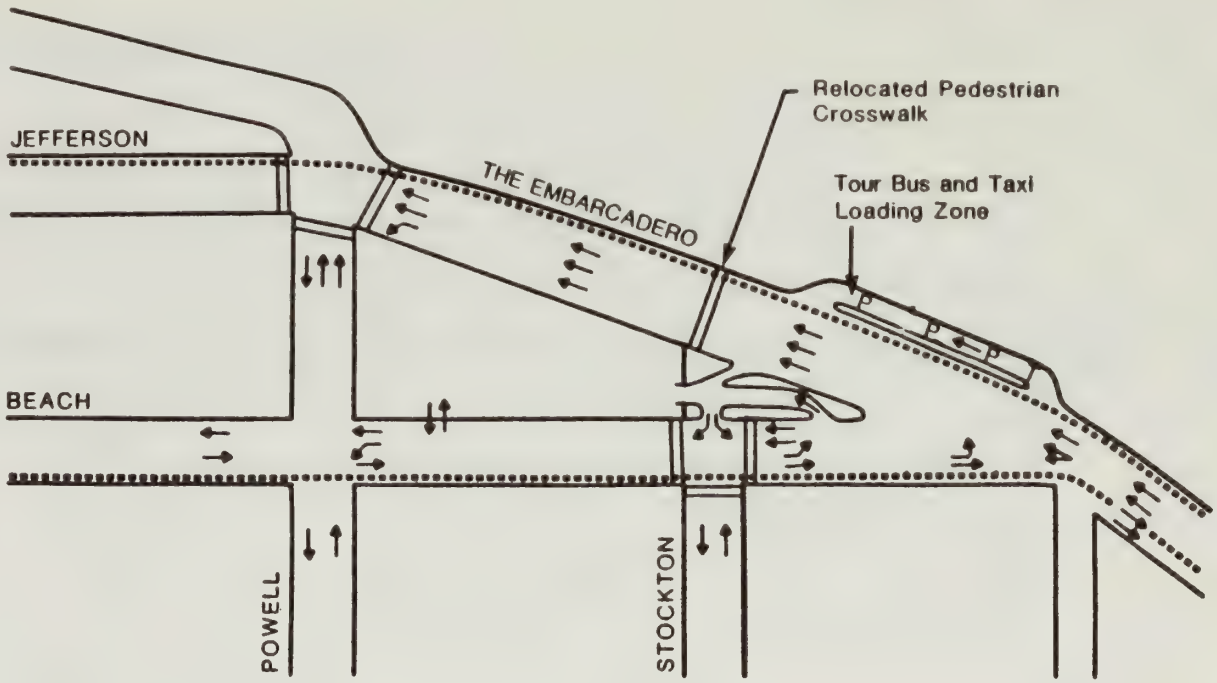
* - Assumes that 80 Francisco is used for remote parking, comparable with all other alternatives.

** - Assumes that remote parking is moved to Levi's Plaza area as recommended by the CAC and 80 Francisco is not used for remote parking.

Source: DKS Associates

PIER 39 GARAGE ORIGINAL CAC ALTERNATIVE EXTERNAL CIRCULATION SCHEME

FIGURE 32B



Planned Muni F-Line Allignment
P Passenger Loading Zone
T Truck Access
Pedestrian Crosswalk

SOURCE: DKS ASSOCIATES

NO SCALE

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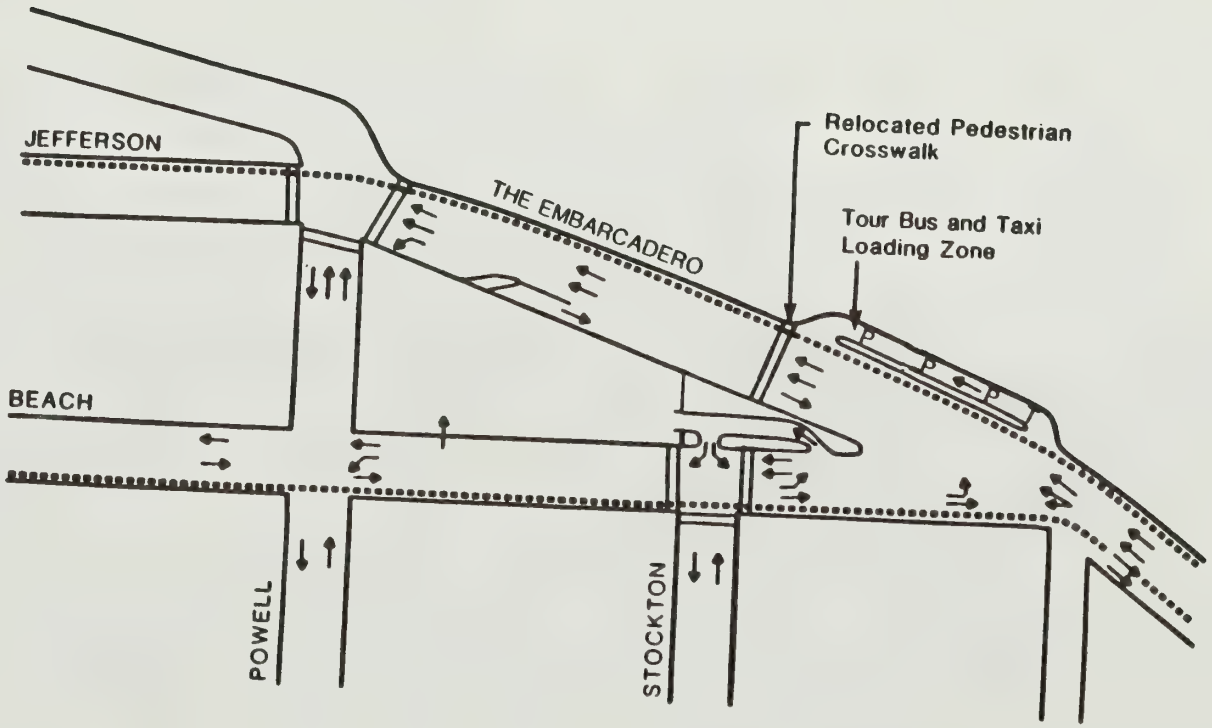
PIER 39 GARAGE REVISED CAC ALTERNATIVE EXTERNAL CIRCULATION SCHEME

FIGURE 32C



Planned Muni F-Line Allignment
P Passenger Loading Zone
T Truck Access
Pedestrian Crosswalk

SOURCE: DKS ASSOCIATES

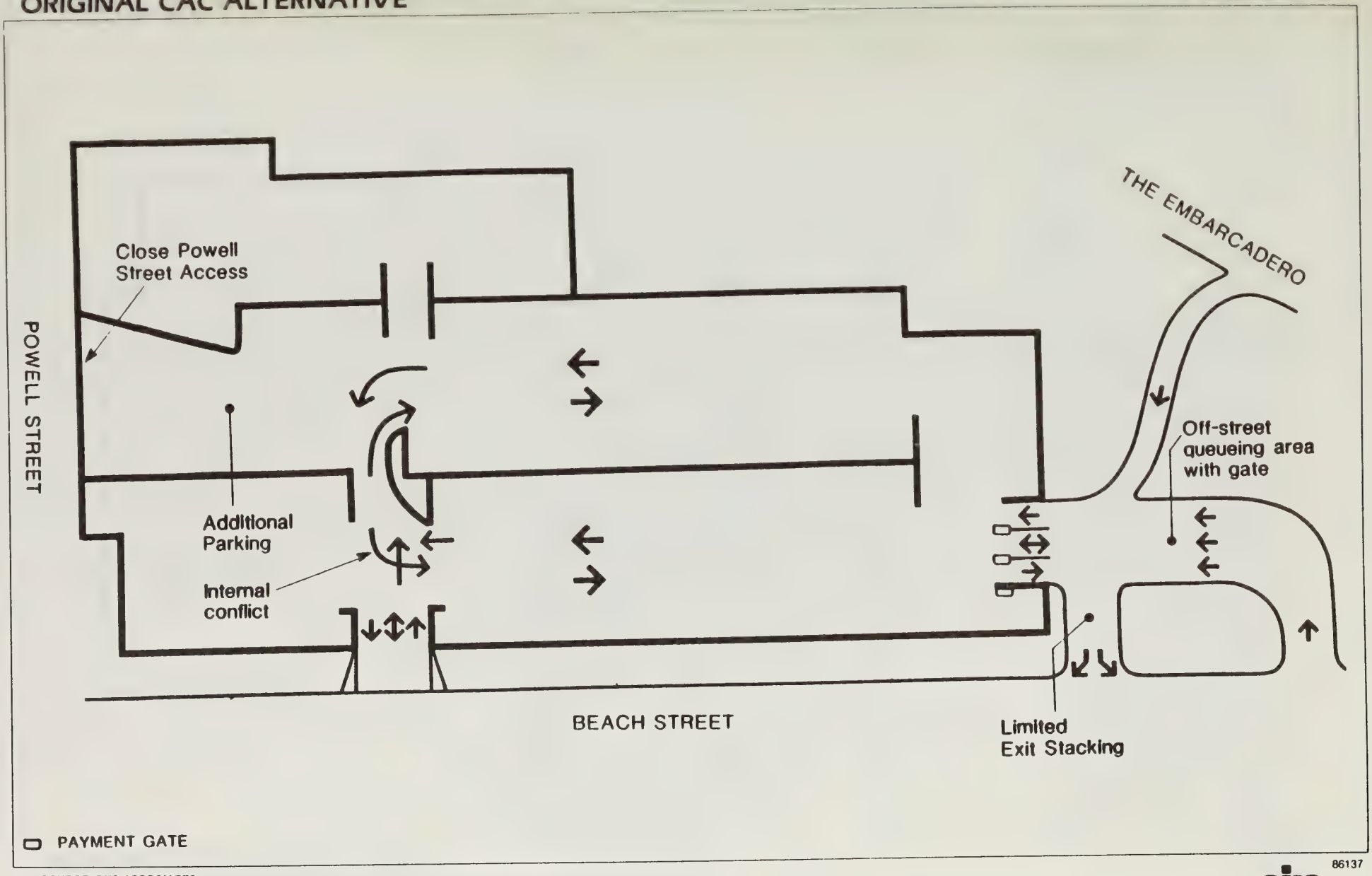
NO SCALE

86137

eip

PIER 39 GARAGE GROUND FLOOR CIRCULATION
ORIGINAL CAC ALTERNATIVE

FIGURE 31E



SOURCE: DKS ASSOCIATES

NO SCALE

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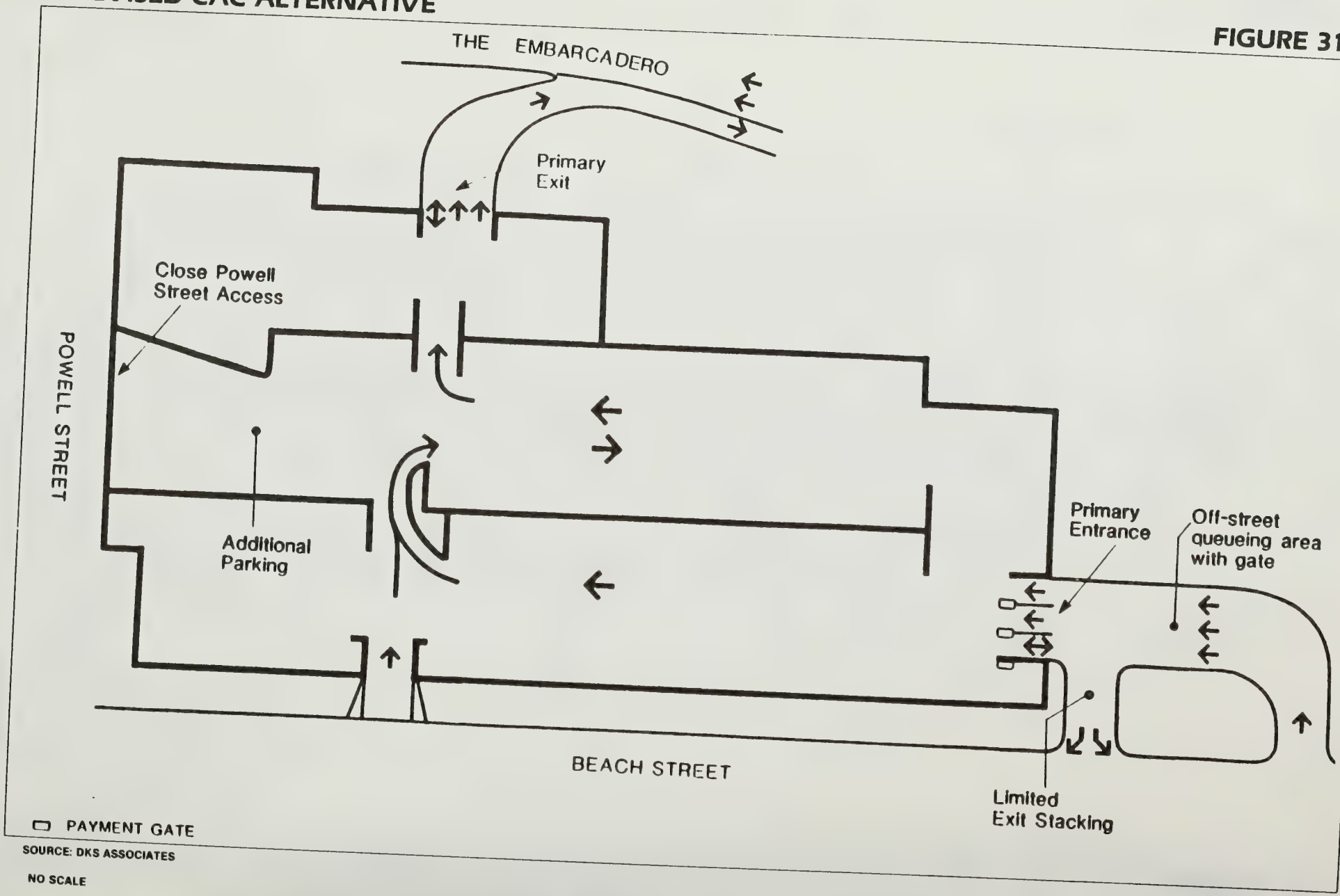
PIER 39 GARAGE GROUND FLOOR CIRCULATION
REVISED CAC ALTERNATIVE

FIGURE 31F



SOURCE: DKS ASSOCIATES

NO SCALE

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The diverted traffic to remote parking, at its peak, would amount to about 85 to 100 vehicles in the peak hour on weekends. This traffic would head south passing through the intersections of Embarcadero/Sansome and Embarcadero/Battery. During weekend peak hour conditions, these intersections operate at levels of service B to C, handling over 1,500 vehicles in the southbound direction. The diverted traffic would amount to at most a six percent change in southbound traffic and would not significantly impact the operations at these intersections. In the event that another remote parking facility were designated in the geographic area north of Vallejo Street and east of Telegraph Hill, no other area intersections could potentially show significant adverse traffic impacts due to the volume of traffic which may be added.

Parking Availability.

In order to reflect changes since the data presented in the Transportation background study was collected, the second full response on page C&R - 145 if changes to read as follows (changes are underlined):

The survey details were contained in the Appendix of the background traffic study and also reproduced below, in Figure C&R 17 and Tables C&R 9 and 9. In order to reflect changes in the supply of parking spaces at location #3 (Travelodge) which lost ten spaces in order to provide handicapped accessibility, the figure "266" on line three of Tables C&R 9 and 10 is changed to read "256." Due to the construction of a new hotel at location #14, that line is deleted from Tables C&R 9 and 10 and the lot shown on the Figure C&R 17 at the southwest corner of Taylor and North Point is removed. The columns totals on Tables C&R 9 and 10 are changes as appropriate. Because the EIR does not assume that these lots satisfy any of the parking demand generated by the project, these changes do not affect the impact analysis. This background information about parking conditions in the area is presented at the request of the commenter.

Water Quality.

The second and third paragraph should be replaced with the following (changes are underlined).

"The project sponsor indicates that the only conditioning chemical that they intend to use is Dylox, a proprietary aquarium pesticide. The active ingredient is tricholorphon, which consists of 0,0-dimethyl-2,2,2-trichloro 1-hydroxyethyl phosphonate or 0,0-dimethyl-1-hydroxy-2-trichloro methyl phosphonate.

Dylox is a hazardous material and must be handled and stored carefully. Properly handled, it would pose no threat to human health. Ingestion of undiluted Dylox could be hazardous and possible fatal to humans. Similarly, many household products, including pesticides, kitchen and bathroom cleaners and automotive cleaners and solvents could be hazardous or fatal if ingested. Dylox would be stored and handled in accord with the manufacturers instruction and would be used only by appropriately trained personnel. Dylox would not be removed in the aquarium filters as currently proposed, although it could be removed by charcoal filters. Dylox acts as a cholinesterase inhibitor, similar to flea powders used to control fleas on pets. It breaks down into ultimately harmless chemical compounds, including H_3PO_4 (phosphoric acid), and other salts, at a rate dependent on temperature and pH in both fresh and saltwater aquarium environments.[1] The salts are mainly chlorides, similar to or the same as those found in sea water and bay water (e.g., sodium chloride, which is table salt). At an application rate of .25 ppm, use of Dylox would result in an addition of chlorides to bay water of less than 1 milligram per liter; the chloride concentration in bay water is about 15,000 milligrams per liter, so the addition would not be noticeable.[2] DDVP is an intermediate breakdown product. It is a toxic chemical, as is trichlorphon, although toxicity studies show that it is harmful at concentrations far higher than the proposed .25 ppm. Studies done in the 1970s on Dylox use in fish farm ponds showed that, after four weekly applications at .25 ppm, no traces of DDVP or trichlorphon were detectable to the limits of the testing method used (0.01ppm) 8 hours after the last application.[2] It is estimated that Dylox would consist of inert compounds after four to five days in the project tank.[3]"

1. Terry McDowell, University of California, Davis, Toxicology Department, Fish Laboratory, telephone conversation May 3, 1989. T. Bill Waggoner, PhD., Biochemistry Manager, Research and Development, Mobay Corporation, telephone conversation July 6, 1989.

2. T. Bill Waggoner, PhD., Biochemistry Manager, Research and Development, Mobay Corporation, telephone conversation July 6, 1989.

3. John Rupp, Marine Biologist, Point Defiance Aquarium, telephone conversation October 12, 1987.

CVB164

APPENDIX A

INITIAL STUDY

APPENDIX A
UNDERWATER WORLD AQUARIUM
INITIAL STUDY
January 29, 1988

1. PROJECT DESCRIPTION

The proposed project would be an aquarium and educational facility built on piles over the Bay in the Pier 39 marina and attached to the existing Pier 39 development, which consists of approximately 196,000 sq.ft. of small scale retail and restaurant uses, a waterfront park and a 1,000-car garage. The proposed aquarium site is located east of Fisherman's Wharf, fronting on The Embarcadero (see Figure 1, page 2 [page A-4 of this document]).

Approximately 22,000 square feet of the 39,600 square foot building site currently contains a video game parlor and bumper car facility, part of the existing Pier 39 development. The remainder of the building site (17,600 square feet) would be constructed on new piles in the Pier 39 marina. Part of the amusement facility and the bumper cars would be removed as would about sixteen boat slips in the marina. Pier 39 would continue to be occupied by small scale retail and restaurant uses.

The proposed aquarium would contain a total of 37,000 gross square feet (gsf) of floor area as defined by the City Planning Code, including 7,500 gsf of lobby/public circulation space, 2,000 gsf of retail gift shop space, exhibit area of 2,500 gsf and an 8,400 gsf aquarium tank (see Figures 2, 3, 4 and 5, pages 3, 4, 5 and 6 [pages A-5, A-6, A-7 and A-8 of this document]). There would be about 4,500 gsf of service area and 12,100 gsf of general public ancillary space (toilets, mechanical, etc.).

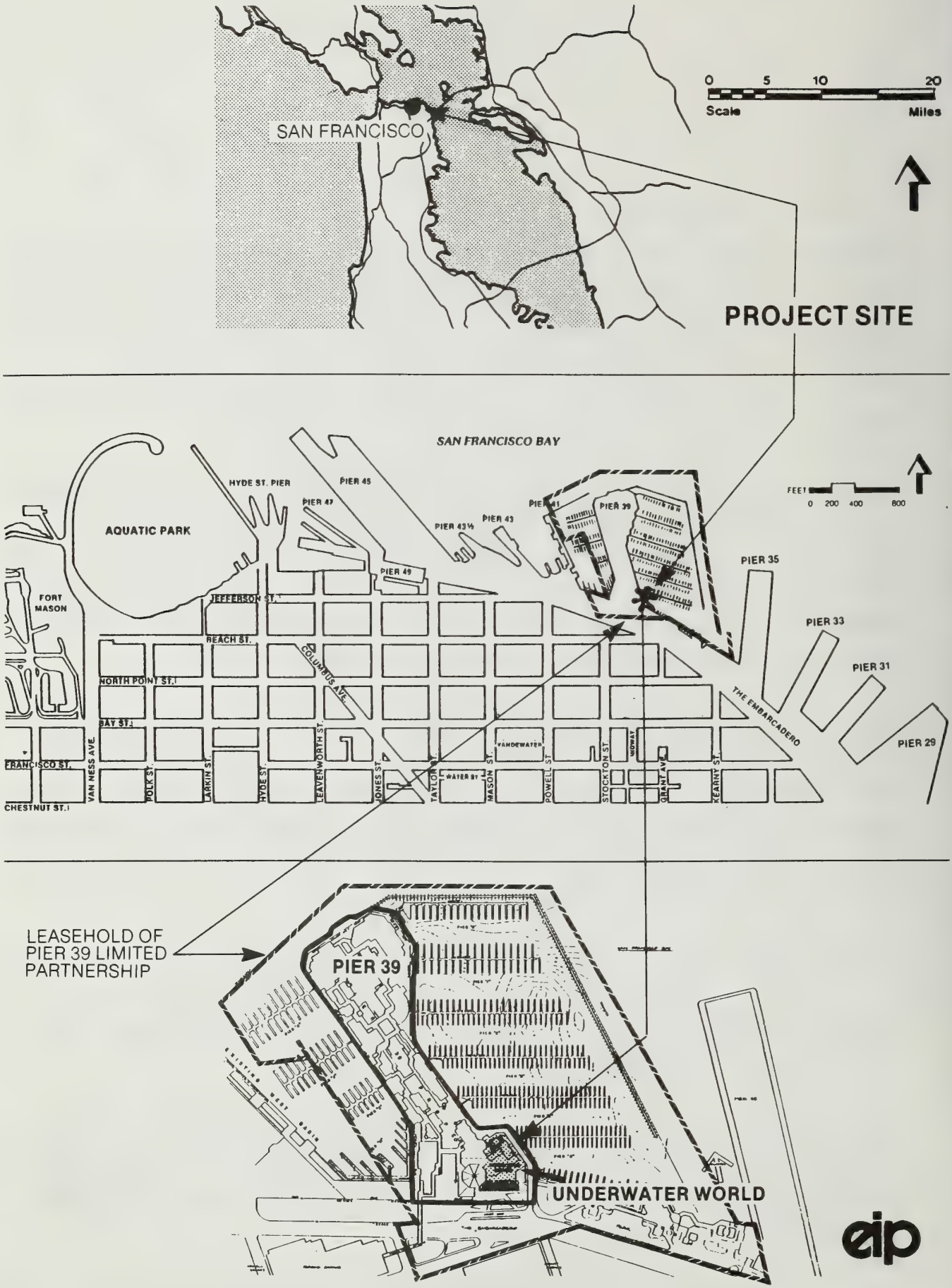
The main entrance to the aquarium would be from The Embarcadero, in front of Pier 39 but outside the main entrance to the pier. Visitors would enter the facility and pass through an educational exhibit (a tide pool display) prior to entering the aquarium tank. Visitors would exit at the main entrance.

The project would not involve the construction of new parking spaces. There would be an off-street pedestrian drop-off zone for vehicles and buses in front of the aquarium. This drop-off zone would also serve visitors to the remainder of Pier 39 and other Northern Waterfront attractions, parks and promenades.

SITE LOCATION MAP

FIGURE 1

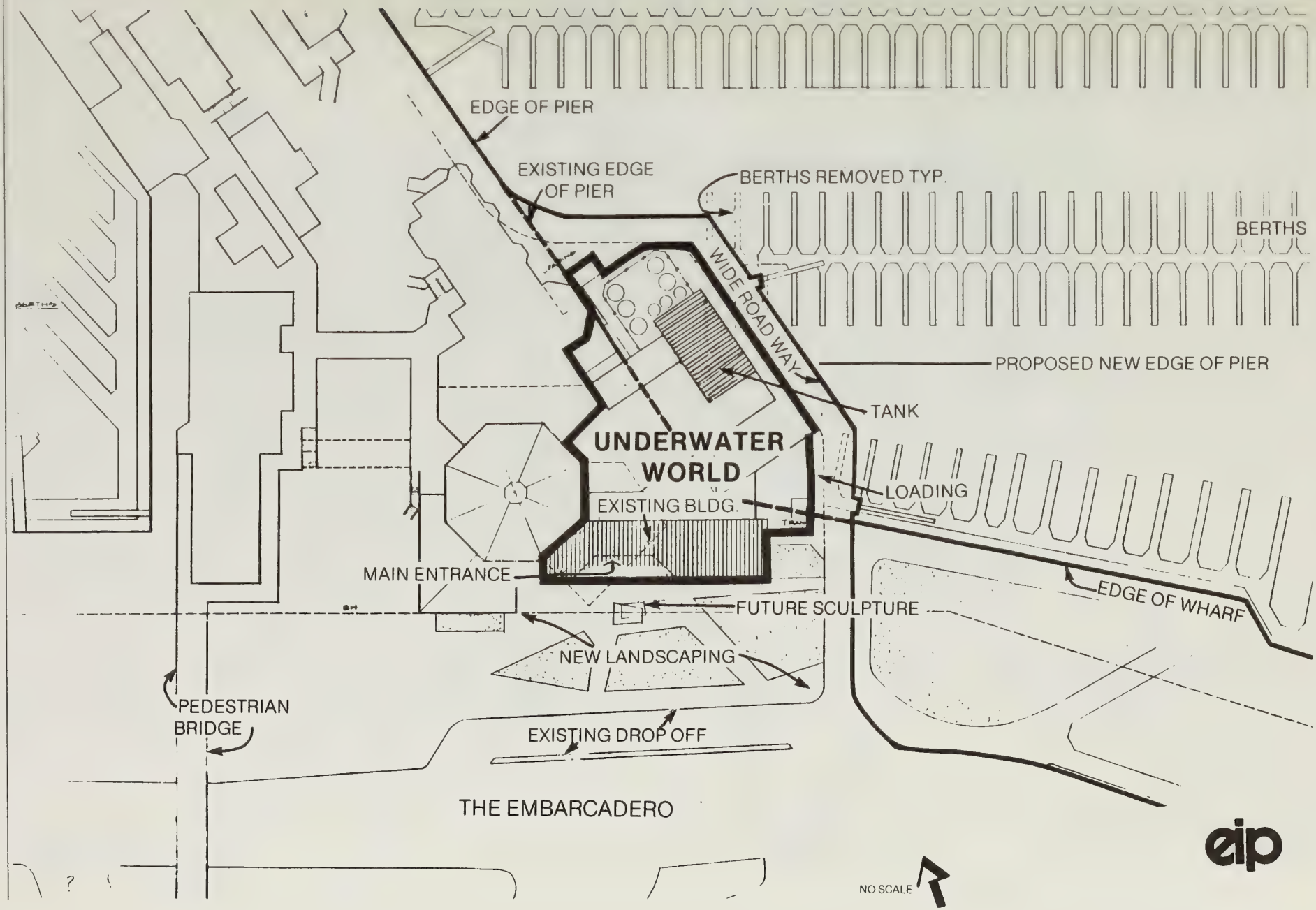
SOURCE EIP ASSOCIATES



SITE PLAN

FIGURE 2

SOURCE: ESHERICK HOMSEY DODGE AND DIAVIS



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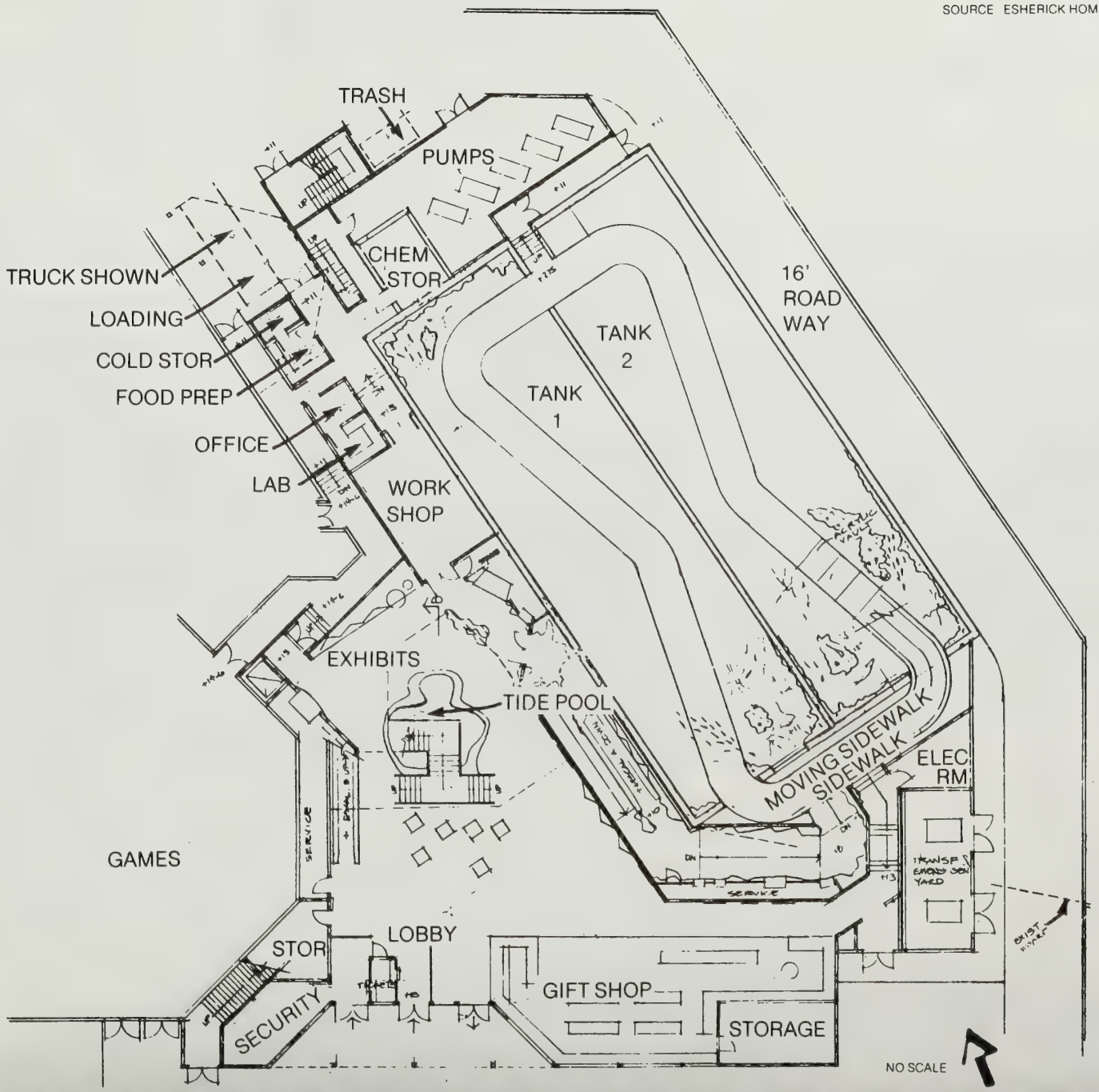
FIRST FLOOR

FIGURE 3

SOURCE ESHERICK HOMSEY DODGE AND DIAVIS



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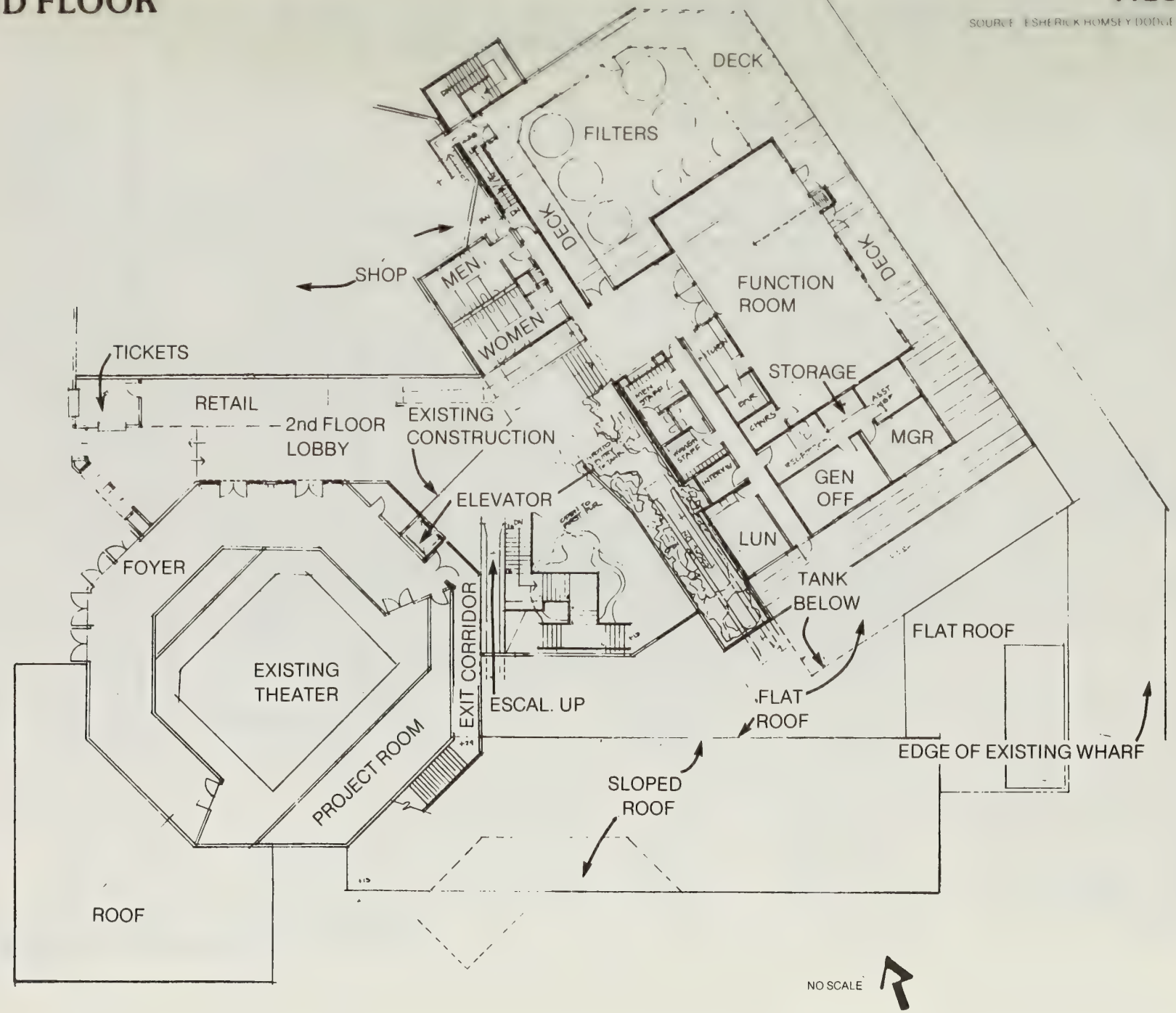
SECOND FLOOR

FIGURE 4

SOURCE: ESHERICK HOMSEY DODGE AND DAVIS



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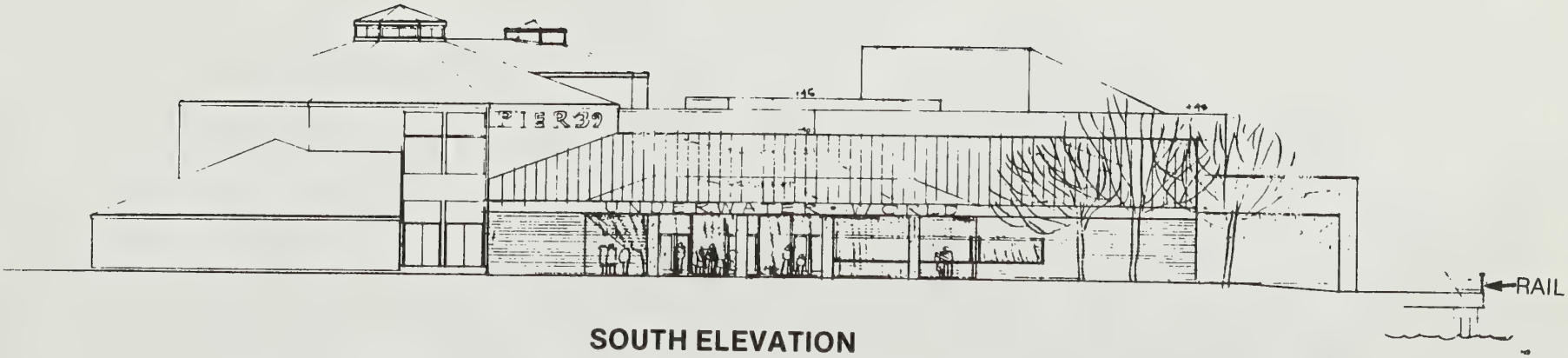
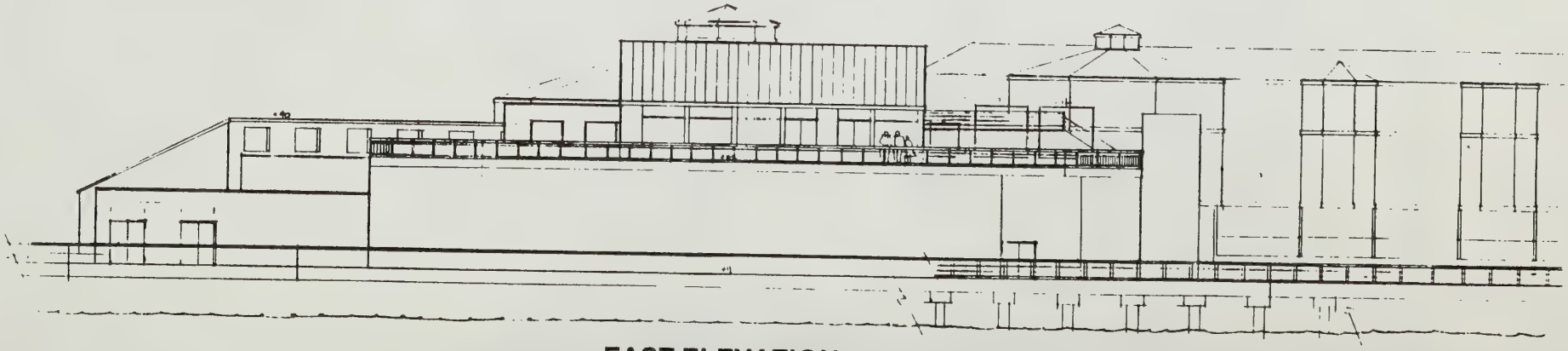
SOUTH AND EAST ELEVATIONS

FIGURE 5

SOURCE ESHERICK HOMSEY DODGE AND DIAVIS



SOUTH ELEVATION



EAST ELEVATION

NO SCALE

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The aquarium tank would contain approximately 750,000 gallons of salt water drawn from the Bay and filtered through a set of pressure filtration tanks. The circulation system would be cold-water (at Bay temperature) and semi-closed. A semi-closed system allows the aquarium water to be gradually released and replaced while being continuously circulated and filtered. A moveable walkway would carry visitors through an acrylic tunnel passing through the interior of the aquarium tank. The aquarium would contain approximately 2,000 fish which are indigenous to the Bay Area and Northern California.

The first story of the proposed project would contain approximately 22,000 gsf of area including the lobby, main tanks, gift shop, tidal pool, and mechanical rooms. A partial mezzanine would contain 2,000 gsf. The second story of the project would contain approximately 10,000 gsf of administrative offices, a function room (for education groups, post conference groups, etc.), public spaces and staff spaces. An area of 3,000 gsf would be provided on the roof for mechanical use.

The platform of Pier 39 would be extended to the east and would contain about 17,600 gsf for the proposed building and new deck. Continued access would be provided to the public and emergency vehicles around the entire Pier 39 development from The Embarcadero.

The project sponsors anticipate completion of the project design by mid-1988. Construction would commence once permits were issued. The project would take approximately 14 months to construct and three months to prepare the fish tank for occupants. The uncompleted portion of the northern waterfront park improvements by Pier 39, along the Embarcadero east of Pier 39 (which was required as a condition of approval of the construction of recent Pier 39 improvements), would be used as a staging area for the project. Once the proposed project is completed, the entire park would be constructed. The project sponsors estimate construction costs of $12,000,000. The project sponsors are the Pier 39 Limited Partnership, ERA Equities of San Francisco, and Questar Corporation of Auckland, New Zealand. The project architects are Esherick, Homsey, Dodge and Davis.

The project would require permits from the Bay Conservation and Development Commission, the U.S. Army Corps of Engineers and the Port of San Francisco in addition to an amendment to the previous Pier 39 Conditional Use Authorization from the City Planning Commission (CPC Resolution 7551). A permit from the Regional Water Quality Control Board might be required.

2. SUMMARY OF POTENTIAL ENVIRONMENTAL EFFECTS

A. EFFECTS FOUND TO BE POTENTIALLY SIGNIFICANT

The proposed Underwater World project is examined in this Initial Study to identify potential effects on the environment. Some of the effects that would be generated by the proposed project, either on a project-specific basis or cumulatively, have been determined to be potentially significant and will be analyzed in an Environmental Impact Report. Other impacts would not be significant, but will be included in the EIR for informational purposes. The EIR will cover land use and zoning including bay fill; relationship of the proposed buildings to the adopted environmental plans and goals; visual quality; transportation; construction noise; air quality - project operation and traffic; water quality/marine biology; and geology/topography

B. EFFECTS FOUND NOT TO BE SIGNIFICANT

The following environmental effects would either be insignificant or mitigated to insignificant levels by measures incorporated into the project design. These require no further environmental analysis and will not be addressed in the EIR.

Light and Glare. The proposed project would not generate any light or glare impacts on other properties.

Population. The proposed project would not displace large numbers of employees or any residents, and would not create a significant demand for housing.

Operational Noise. The proposed project would not be affected by ambient noise levels due to the inclusion of noise insulation features in the project designs. Project operation, including traffic generated by the project, would not significantly increase the ambient noise levels in the project vicinity.

Construction-Generated Air Quality. Construction activities may cause a temporary increase in localized particulate levels; a measure to reduce emissions generated during construction activities is included in the proposed project.

Odors. Construction of the proposed project would not create objectionable odors or involve burning of any materials.

Shadows. The proposed project would not generate significant shadow impacts on streets and sidewalks around the site. At no time would the proposed project cast any shadow on an open space protected under Proposition K.

Wind. The proposed project would not generate significant wind impacts at pedestrian levels.

Utilities/Public Services. Increased demand for public services and utilities attributable to the proposed project would not require additional personnel or equipment and would be too small to make a noticeable contribution to cumulative service demands.

Endangered Species. The proposed project would not affect any rare or endangered species or habitats.

Water Supply. The proposed project would not affect a public water supply, nor would it affect ground water. The project would not result in flooding, erosion or siltation.

Energy. The proposed project would be constructed to conform with the energy requirements of Title 24. The project would not encourage activities that would result in the wasteful use of energy or have a substantial effect on a natural resource.

Hazards. The proposed project would not be affected by hazardous uses or health hazards in the area, nor would the proposed project create potential health hazards. Evacuation and emergency response plans would be developed by the project sponsor.

Cultural. The project would not result in the demolition of any historic structures and since it is being built over the Bay, would not involve excavation of any potential historic artifacts. An archaeological report was conducted for the project site in which it was determined that it is very unlikely that prehistoric remains would be disturbed during construction.

3. ENVIRONMENTAL SETTING

3.1 COMPATIBILITY WITH EXISTING ZONING

A. COMPATIBILITY WITH EXISTING ZONING AND PLANS

	Not Applicable	Discussed
1. Discuss any variances, special authorizations, or changes proposed to the City Planning Code or Zoning Map, if applicable.	___	X
*2. Discuss any conflicts with any adopted environmental plans and goals of the City or Region, if applicable.	___	X

Zoning

The proposed project is located in the C-2 (Community Business) District. The site is also in the Northern Waterfront Special Use District No. 1. This Special Use District was created by the City to protect the unique maritime character of the area and to promote operations related to water-borne commerce or navigation as the principal uses in the area. Because the project is not directly related to the conduct of waterborne commerce or navigation, it would require an amendment of Pier 39's Conditional Use authorization by the City Planning Commission (Section 240 of the City Planning Code). A public aquarium would be permitted in the C-2 District under Section 221 of the City Planning Code (Assembly and Entertainment Uses).

The floor area ratio (FAR) for the C-2 District is 3.6:1. However, the Northern Waterfront Special Use District No. 1 permits a higher maximum FAR of 5.0:1. The project would have an FAR of 0.93:1, less than the maximum allowable 5.0:1. The project site is located in a 40-X Height and Bulk District, where the allowable building height is 40 feet and there are no bulk requirements unless the average slope of the site is greater than 5%. The average slope is less than five percent for the project site. The project would rise to 40 feet above the street and would comply with all of the requirements of the 40-X Height and Bulk District. For this project, Section 151 of the City Planning Code would require provision of 74 parking spaces. The City Planning Commission will consider parking adequacy when it considers the proposed amendment of Pier 39's Conditional Use Authorization.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

Under Section 152 of the City Planning Code, one freight loading space would be required for this project. One freight loading space, which meets the minimum required dimensions under Section 154, would be provided.

Relationship to the Master Plan and Other Planning Documents

The relationship of the proposed project to the policies of the Master Plan, and other adopted environmental plans and goals will be analyzed in the EIR.

3.2 ENVIRONMENTAL EFFECTS

LAND USE

	Yes	No	Discussed
1. Land Use. Could the project:			
*a. Disrupt or divide the physical arrangement of an established community?	___	X	X
b. Have any substantial impact upon the existing character of the vicinity?	___	X	X

The proposed project site is located in San Francisco in the Northern Waterfront District near Fisherman's Wharf. This area has been dominated in the recent past by a combination of maritime-oriented commercial uses such as fish processing and other uses serving the San Francisco commercial fishing fleet, primarily on Piers 41 through 45 and the Hyde Street pier, and tourist-serving uses, including hotels, specialty retail complexes (i.e. Pier 39) and entertainment establishments. To the southeast of the project site, in the Base of Telegraph Hill area, there has been development of higher-intensity office and residential uses compared to previous development in recent years.

Uses within two to three blocks of the proposed aquarium site consist mainly of the Pier 39 specialty retail complex, parking lots and garages, hotel and residential buildings, and other Pier buildings. The Pier 39 parking garage is located across the Embarcadero. Directly to the north, in the Bay, is the Pier 39 marina with slips for 360 boats.

The proposed aquarium site is currently occupied by a portion of the Pier 39 complex and a portion of the Pier 39 marina. The remainder of Pier 39 is occupied by the Pier 39

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

complex. The existing character of the vicinity of the project would not change in type of development but would experience an increased intensity of development.

Although the aquarium would be the first of its type in the project area, it would represent continued commercial activity on the project site and in the project area. The project would not disrupt or divide the physical arrangement of the existing community. The project would involve the creation of new Bay fill, as defined by the Bay Conservation and Development Commission (BCDC). BCDC will provide input as to the significance of this impact on the Bay. These issues will be discussed in the EIR.

	Yes	No	Discussed
2. Visual Quality. Could the project:			
*a. Have a substantial, demonstrable negative aesthetic effect?	___	X	X
b. Substantially degrade or obstruct any scenic view or vista now observed from public areas?	X	___	X
c. Generate obtrusive light or glare substantially impacting other properties?	___	X	X

The proposed project would be similar in height to the existing Pier 39 development, but would represent an increase in height on the project site. The project would result in a loss of open area on the undeveloped portion of the site. The bulk of the project would be similar to that of the rest of Pier 39, but would be smaller than other recently-built retail and office structures to the south and east.

The proposed project would block some views of the Bay from the Embarcadero and from sidewalks along Grant and Beach Streets. The project would not block any other views of the Bay or other points of interest from public open space areas. Since the proposed project would not be higher than some of the existing development in the project area, it would not become a visible part of the City skyline. These issues will be further analyzed in the EIR.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

The proposed project would not include any reflective glass and would not cause any glare impacts on nearby pedestrians or autos. See Mitigation Measures, page 25 [page A-29]. This issue will not be discussed further in the EIR.

	Yes	No	Discussed
3. Population. Could the project:			
*a. Induce substantial growth or concentration of population?		X	X
*b. Displace a large number of people (involving either housing or employment)?		X	X
c. Create a substantial demand for additional housing in San Francisco, or substantially reduce the housing supply?		X	X

The proposed project would not result in a reduction in the number of employees in the existing amusement facility at Pier 39.[1] It is estimated that the proposed project would generate employment for approximately 45 workers, primarily in commercial service, aquarium maintenance and building maintenance. The maximum potential patronage of the aquarium would be 8,000 persons per day, or 800 persons per hour. Since many jobs at the proposed project would provide employment for semi- and unskilled workers with low to moderate incomes, including minorities, most of the new jobs would be expected to be held by current San Francisco residents who are either unemployed or underemployed. The project would thus not be expected to attract new residents to San Francisco or generate new housing demand. These issues will not be discussed further in the EIR.

[1] Joe Smith, Pier 39, telephone conversation, 9/16/87.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

4. Transportation/Circulation. Could the project:	Yes	No	Discussed
*a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system?	X		
b. Interfere with existing transportation systems, causing substantial alterations to circulation patterns or major traffic hazards?		X	
c. Cause a substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity?	X		
d. Cause a substantial increase in parking demand which cannot be accommodated by existing parking facilities?	X		

A transportation study is being conducted for the project. Issues being examined include traffic, transit, parking and pedestrian impact resulting from the project and from cumulative development in the Northern Waterfront area. These issues will be analyzed in the EIR.

5. Noise. Could the project:	Yes	No	Discussed
*a. Increase substantially the ambient noise levels for adjoining areas?		X	X
b. Violate Title 24 Noise Insulation Standards if applicable?		X	X
c. Be substantially impacted by existing noise levels?		X	X

Project Operation

The noise environment of the site, like downtown San Francisco, is dominated by vehicular traffic noise. The Environmental Protection Element of the Master Plan indicates a day-night average noise level of 70 dBA in 1974, along the Embarcadero, adjacent to the project site and along North Point Street.[1] The nearest residences are approximately 800 feet south of the site on the south side of North Point Street.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

The Environmental Protection Element of the Master Plan contains guidelines for determining the compatibility of various land uses with different noise environments. For commercial uses, the guidelines recommend an analysis of noise reduction requirements and inclusion of noise insulation features where there is an exterior noise environment above an Ldn of 70 dBA. The proposed structure would not include housing, so Title 24 Noise Standards would not be applicable.

The project's operation would not result in perceptibly greater traffic-related noise levels than those existing in the area. To produce a noticeable increase in environmental noise, a doubling of existing traffic volume would be required; traffic increases of this magnitude would not occur with anticipated cumulative development including the project.[2]

The project would be required to comply with the San Francisco Noise Ordinance, San Francisco Police Code Section 2909, "Fixed Source Noise Levels," which regulates mechanical equipment noise. The project site and the surrounding area is within a C-2 district. In this district, the ordinance limits equipment noise levels at the property line to 70 dBA between the hours of 7 a.m. and 10 p.m. and to 60 dBA between the hours of 10 p.m. and 7 a.m. Noise generating equipment on the project site would include two small ozone generators and two water pumps totaling 75 horsepower. During lulls in traffic, mechanical equipment generating 67 dBA could dominate the noise environment at the site. Because all mechanical equipment would operate day and night, the project engineer and architect would be required to include design features in the building to limit mechanical equipment noise levels to 60 dBA to meet the nighttime limit. Such noise levels would not result in a significant environmental impact. Discussion of operational and transportation-related noise will not be included in the EIR.

Construction Noise

Impacts of construction noise will be analyzed in the EIR.

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[1] dBA is a measure of sound in units of decibels (dB). The "A" denotes the A-weighted scale, which simulates the response of the human ear to various sound frequencies.

Ldn, the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises; noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

[2]See San Francisco Department of City Planning Downtown Plan EIR (EE81.3), certified October 18, 1984, Vol. 1, Section IV.E. generally and Section IV.J., pp. IV.J.8-18, Increases of 1 dBA or less in environmental noise are not noticeable by most people outside a laboratory situation (National Academy of Sciences, Highway Research Board, Research Report No. 117 (1971)). (See also FHWA Highway Traffic Noise Prediction Model underlines, Report #FHWA-RD-77-108, December 1978, p. 8, regarding doubling of traffic volumes producing increases of 3 dBA or more, which are noticed by most people.)

	Yes	No	Discussed
6. Air Quality/Climate. Could the project:			
*a. Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation?	X		X
*b. Expose sensitive receptors to substantial pollutant concentrations?		X	X
c. Permeate its vicinity with objectionable odors?		X	X
d. Alter wind, moisture or temperature (including sun shading effects) so as to substantially affect public areas, or change the climate either in the community or region?		X	X

Two types of air quality impacts could be expected from the proposed project: long-term impacts related to use and operation, and short-term impacts from construction activity. Project-related and cumulative traffic may contribute to air pollution near the project sites and will be analyzed in the EIR.

Construction activities would temporarily affect local air quality. Particulates are generally the major source of construction air emissions. Demolition and construction activities would not involve burning of any materials and would not create objectionable odor. Tne construction of the project would not result in excavation or other soil disturbance with corresponding particulate generation. There will be no further discussion of construction-related air quality impacts in the EIR. A Mitigation Measure is included, see page 25 [page A-29].

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

The Sunlight access ordinance, Proposition K, is intended to protect sunlight on designated open spaces throughout San Francisco from one hour after sunrise to one hour before sunset. The closest park to the proposed project is the Chestnut/Kearny mini park which is approximately 1,250 feet to the south. The difference in height between ground level at the mini park and ground level adjacent to the proposed building is 20 feet. The longest shadow that would be cast by the proposed building during hours governed by Proposition K would occur on December 21 at 8:22 a.m. when the proposed project would cast a shadow of approximately 350 feet to the northwest. At no time would the proposed project cast any shadow on an open space protected under Proposition K. The proposed project would not increase wind accelerations in the project vicinity. These topics will not be discussed in the EIR.

	Yes	No	Discussed
7. Utilities/Public Services. Could the project:			
*a. Breach published national, state or local standards relating to solid waste or litter control?	___	X	___
*b. Extend a sewer trunk line with capacity to serve new development?	___	X	X
c. Substantially increase demand for schools, recreation or other public facilities?	___	X	___
d. Require major expansion of power, water, or communications facilities?	___	X	X

The proposed project would contribute to the cumulative demand for community services citywide. Cumulative impacts upon solid waste and waste water service providers have been analyzed in the Downtown Plan EIR and no significant impacts have been identified. The Downtown Plan EIR setting and impacts discussion for solid waste and waste water (Vol. 1, IV.F.1-2 & IV.F.8-10; Vol. 2, pp. A-7 & K.1-2; Vol. 3, pp. C&R F.1-4), is summarized below and incorporated by reference herein. Updated information on solid waste disposal is also include.

San Francisco's solid waste is currently disposed of at the Altamont Hills landfill under a contract which expires in 1988. The City recently entered into a contract with the Alameda County Solid Waste Management Authority and the Oakland Scavenger Company

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

to dispose of 15 million tons of solid waste at the Altamont Hills landfill beginning when the present contract expires. This is expected to serve the City's needs until 2009.

A sewer system is being built pursuant to the City's Clean Water Program. The system is intended to handle combined volumes of sewage and rainwater runoff. Since the capacity of the system is designed to handle rainwater flows (which can be 50 times the volume of regular sewage) additional development citywide would not affect operation of the sewer system.

Providers of all utilities and services have been contacted and have indicated that existing capacities are adequate to serve the proposed project. Statements from utility and service providers are available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street, Sixth Floor. No further analysis is necessary in the EIR.

	Yes	No	Discussed
8. Biology. Could the project:			
*a. Substantially affect a rare or endangered species of animal or plant, or the habitat of the species?	___	X	X
*b. Substantially diminish habitat for fish, wildlife or plants, or interfere substantially with the movement of any resident or migratory fish or wildlife species?	X	___	X
c. Require removal of substantial numbers of mature, scenic trees?	___	X	X

The proposed project would discharge filtered aquarium water and backwash water into the Bay near the project site. Potential impacts on water quality and marine biology will be analyzed further in the EIR.

The project site is on Pier 39 and a portion of the Bay used for marina purposes. There are no rare or endangered species of plants or animals on the site. Street trees and other landscaping would be planted along the Embarcadero frontage of the site. No existing trees would be removed. The proposed project would not interfere with the movement of any resident or migratory birds. These issues will not be discussed further in the EIR.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

9. Geology/Topography. Could the project:	Yes	No	Discussed
*a. Expose people or structures to major geologic hazards (slides, subsidence, erosion and liquefaction)?	X		X
b. Change substantially the topography or any unique geologic or physical features of the site?		X	X

These issues will be discussed further in the EIR.

10. Water. Could the project:	Yes	No	Discussed
*a. Substantially degrade water quality, or contaminate a public water supply?	X		X
*b. Substantially degrade or deplete ground water resources, or interfere substantially with ground water recharge?		X	
*c. Cause substantial flooding, erosion or siltation?		X	

There is a permanent body of water partially covering the project site. The depth to water is approximately 10 feet below-grade, but varies with the Pacific tide. The site is also covered by paved roads and existing buildings. Run-off would continue to drain into the combined City storm/sewer system. The project would not affect ground water quality or the public water supply. The project would not result in additional flooding, erosion or siltation. There would be no dredging on the proposed site. These issues will not be discussed further in the EIR.

The project sponsor would be required to meet the water quality standards set by the Regional Water Quality Control Board for discharge into San Francisco Bay. The project impacts would be reviewed after the completion of the species list. The design of the aquarium outfall would include flow regulator or energy dissipation systems to prevent increased water turbidity. These issues related to water quality in the San Francisco Bay and effects on Bay marine life will be analyzed in the EIR.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

	Yes	No	Discussed
11. Energy/Natural Resources. Could the project:			
*a. Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner?	___	X	X
b. Have a substantial effect on the potential use, extraction, or depletion of a natural resource?	___	X	___

Annual energy consumption by the portion of Pier 39 to be removed has not been determined as separate metering for that section of the complex is not yet completed. Based on Title 24 maximum consumption, it is estimated that total annual energy consumption from the existing portion of the site is approximately 6 billion Btu.

Removal of the existing structure would require an unknown amount of energy. Fabrication and transportation of building materials, worker transportation, site development and building construction would require about eight billion Btu of gasoline, diesel fuel, natural gas and electricity.[1,2] Distributed over the estimated 50-year life of the project, this would be about 160 million Btu per year, or about 1.7% of annual building energy requirements.

New buildings in San Francisco are required to conform to energy conservation standards specified by Title 24 of the California Administrative Code. Documentation showing compliance with these standards is submitted with the application for the building permit and is enforced by the Bureau of Building Inspection.

Table 1, page 19 [page A-23 of this document], shows the estimated operational energy which would be used by the project. Project demand for electricity during PG&E's peak electrical load periods, July and August afternoons, would be about 200 kW, an estimated 0.0013% of PG&E's load of 16,000 MW.[3] Project demand for natural gas during PG&E's peak natural gas load periods, January mornings, would be 0.4 million Btu per day, or about .01% of PG&E's peak load of about 3.7 billion cubic feet per day.[4] Annual and peak daily electricity and natural gas consumption are shown in Figures 6 and 7, pages 20 and 21 [pages A-24 and A-25].

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

TABLE 1

ESTIMATED PROJECT ENERGY USE FOR PIER 39 UNDERWATER WORLD

	Excluding Pump Energy (as per Title 24)[1]	Including Pump Energy
Daily Natural Gas Consumption[2]		
Estimated natural gas consumption per sq.ft.	130 Btu[3,4,5]	130 Btu
Estimated peak daily natural gas consumption	40.5 therms	40.5 therms
Monthly Electric Consumption[2]		
Estimated electrical consumption per sq.ft.	0.81 kWh	4 kWh
Estimated total electrical consumption	24,800 kWh (254 million Btu)	123,600 kWh (1.3 billion Btu)
Annual Consumption		
Estimated total annual natural gas consumption	1,470 therms	1,470 therms
Estimated total annual electrical consumption	255,500 kWh (2.6 billion Btu)	1,418,600 kWh (14.5 billion Btu)
Connected kilowatt load	105 kw	345 kw
Estimated total annual energy consumption	3.1 billion Btu (180 barrels of oil)	14.6 billion Btu (2,607 barrels of oil)

[1]Energy use includes space conditioning, service water heating and lighting in accordance with allowable limits under Title 24. This does not include the pumping and filtering of water. Pump energy is considered "source energy" and is not included in the "human comfort" calculations of Title 24.

[2]Water in the tanks will not be heated or cooled; it will remain at the ambient San Francisco Bay temperature. Energy for the tanks will be used for pumping and filtering of Bay water.

[3]Calculations done by Bruce Wallace Partners Ltd., Auckland N.Z. These calculations are available for review at the Office of Environmental Review, 450 McAllister Street, Sixth Floor, San Francisco, California.

[4]Btu (British thermal unit): A standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit (251.97 calories) at sea level.

[5]Energy Conversion Factors:

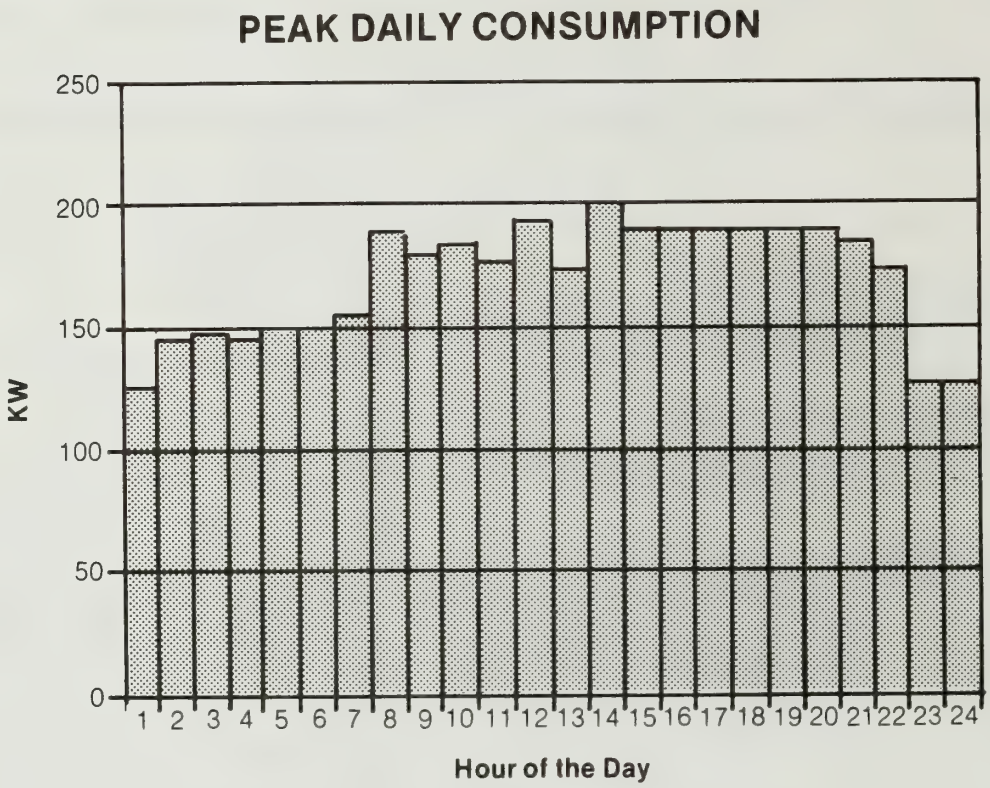
one gallon gasoline	=	125,000 Btu
one kilowatt (kW)	=	10,239 Btu
one therm	=	100,000 Btu
one barrel oil	=	5,600,000 Btu

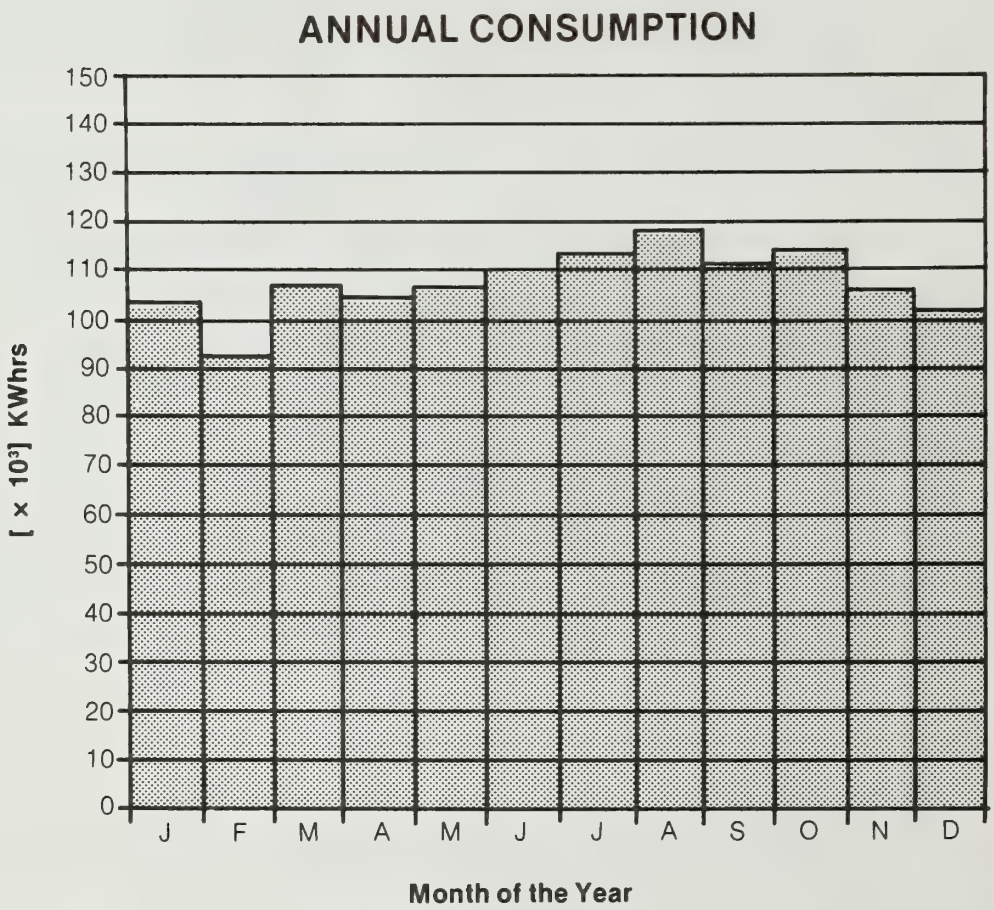
Source: EIP Associates; Bruce Wallace Partners Ltd., Auckland.

ELECTRICITY DISTRIBUTION CURVES
PIER 39 UNDERWATER WORLD

FIGURE 6

SOURCE BRUCE WALLACE PARTNERS LIMITED





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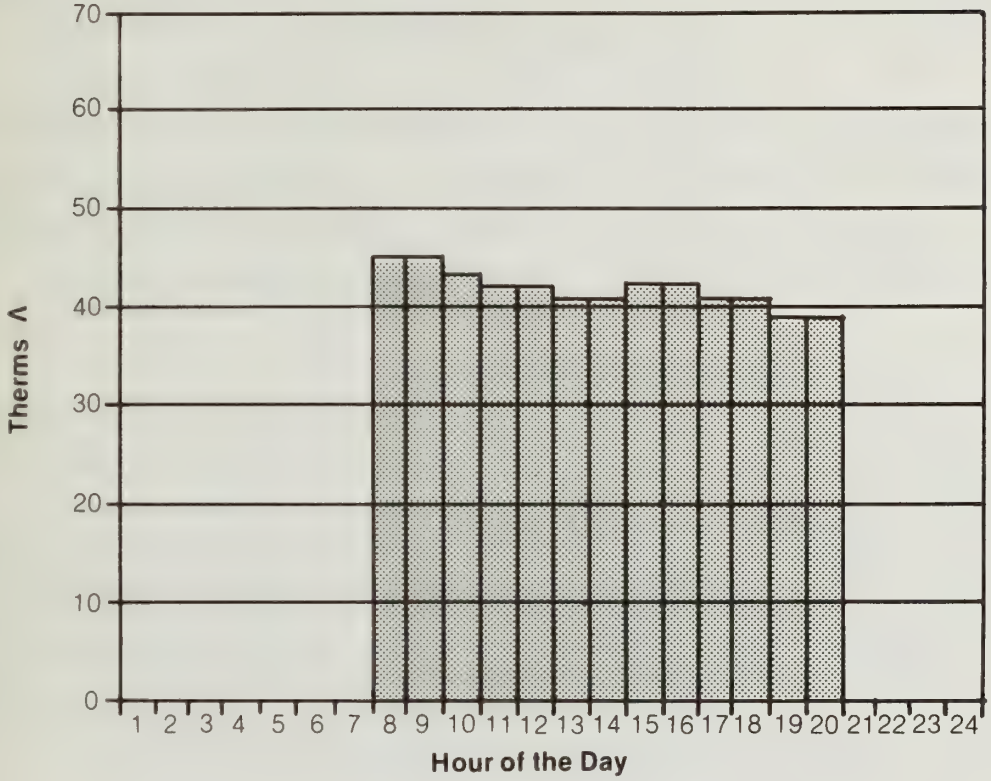
GAS DISTRIBUTION CURVES
PIER 39 UNDERWATER WORLD

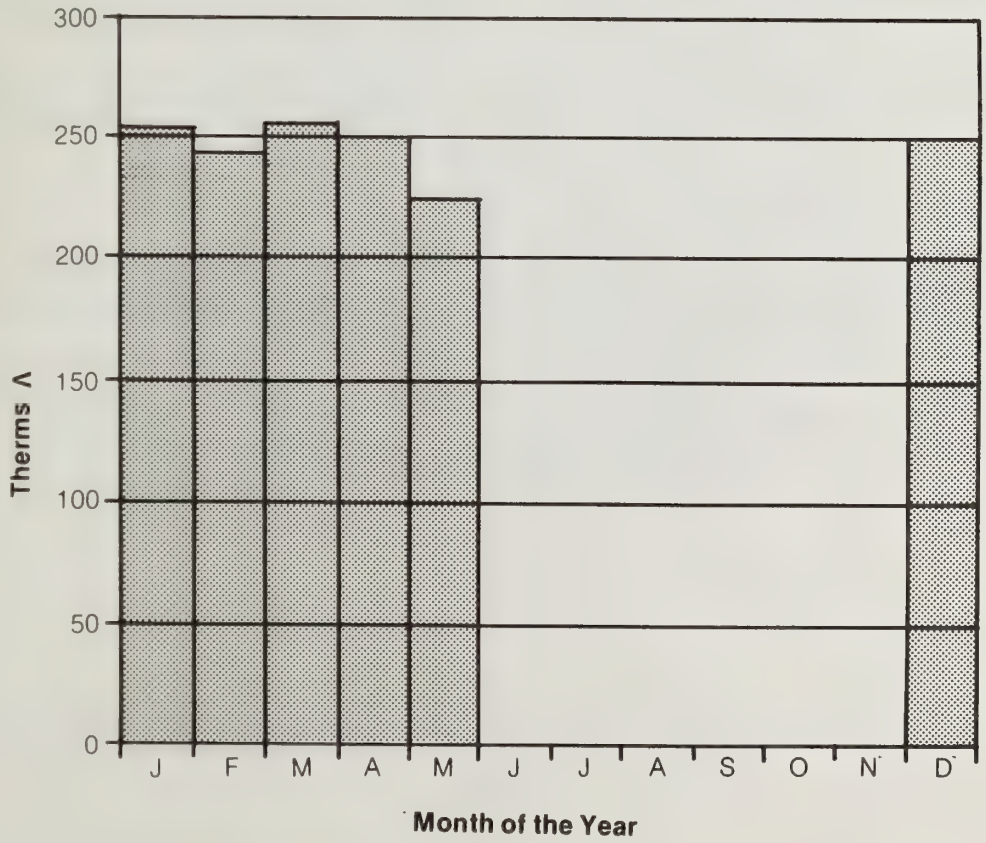
FIGURE 7

SOURCE BRUCE WALLACE PARTNERS LIMITED

PEAK DAILY CONSUMPTION



ANNUAL CONSUMPTION



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San Francisco's electricity requirements would be about 5.0 billion kWh per year by 2000, about a 32% increase from 1984. Peak demand for the city would be about 1,000 MW, a 30% increase in 16 years. About 35 billion cu. ft. of natural gas would be consumed in the City annually by 2000, the same amount as in 1984.[5]

Increased San Francisco energy demands to the year 2000 would be met by PG&E from nuclear sources, oil and gas facilities, hydroelectric and geothermal facilities, and other sources such as cogeneration, wind and imports. PG&E plans to continue receiving most of its natural gas from Canada and Texas under long-term contracts.

These issues will not be discussed further in the EIR.

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[1]The British thermal unit (Btu) is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at sea level. The term "at-source" means that adjustments have been made in the calculation of the thermal energy equivalent (Btu) for losses in energy that occur during generation, transmisstion, and distribution of the various energy forms as specified in: ERCDC, 1977 Energy Conservation Design Manual for New Non-Residential Buildings, Energy Conservation and Development Commission, Sacramento, California, and Apostolos, J.A., W.R. Shoemaker, and E.C. Shirley, 1978 Energy and Transportation System, California Department of Transportation, Sacramento, California, Project #20-7, Task 8.

[2]Hannon, B., et.al., 1978, "Energy and Labor in the Construction Sector," Science 202:837-847.

[3]San Francisco Department of City Planning, Downtown Plan Environmental Impact Report, EE81.3, certified October 18, 1984, Vol. 1, pp. IV.G.3-4.

[4]Ibid.

[5]San Francisco Department of City Planning, Downtown Plan Environmental Impact Report EE81.3, Certified October 18, 1984, Vol. 1, p. IV.G.12.

	Yes	No	Discussed
12. Hazards. Could the project:			
*a. Create a potential public health hazard or involve the use, production or disposal of materials which pose a hazard to people or animal or plant populations in the area affected?	___	X	X
*b. Interfere with emergency response plans or emergency evacuation plans?	___	X	X
c. Create a potentially substantial fire hazard?	___	X	X

The project would not create a potential public health hazard through the production or disposal of harmful materials. Filtering materials would not be hazardous. Dylox, an organic phosphate, would be used a maximum of 3-4 times a year to treat parasites. This drug has a very short half-life, becoming inert ingredients in 4-5 days. Bacteria in the aquarium water would be treated with ozone (O_3), which quickly dissipates into oxygen. The ozone generating system for the proposed project would be a closed system in which incoming seawater would be pumped into an ozone contact chamber. The ozone would interact with the seawater, destroying bacteria and then rapidly reverting back to oxygen. This oxygen with any remaining traces of ozone would then be recycled back to the ozonator to be used again. The treated effluent, free of bacteria and ozone, would then be pumped into the aquarium tank. Ozone would be generated on site at the rate of 6 lbs of O_3/day using two separate 3 lb units. A small, electric driven air compressor would operate intermittently throughout the day..

An evacuation and emergency response plan would be developed as part of the proposed project (see D. Mitigation Measures, page 25 [page A-29]). The project's emergency response plan would be coordinated with the City's emergency planning activities. The project would not create a substantial fire hazard because it would incorporate more extensive fire protection measures than most buildings in the area to comply with more stringent code standards now in effect. These issues will not be discussed in the EIR.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

	Yes	No	Discussed
13. Cultural. Could the project:			
*a. Disrupt or adversely affect a prehistoric or historic archaeological site or a property of historic or cultural significance to a community, ethnic or social group; or a paleontological site except as a part of a scientific study?	___	X	X
b. Conflict with established recreational, educational, religious or scientific uses of the area?	___	X	___
c. Conflict with the preservation of buildings subject to the provisions of Article 10 or Article 11 of the City Planning Code?	___	X	X

Pile driving for the project would occur in an unfilled portion of the Bay and would not disturb archaeological resources. The proposed project would not result in the demolition of any building rated for architectural or historical significance.

In an archaeological study conducted by Dr. Allen Pastron of Archeo-Tec, it was concluded that "planned construction related activities conducted in conjunction with the present project are not likely to result in adverse impacts to prehistoric archaeological resources." Given this, no additional archaeological procedures are recommended at this time. A copy of the study is on file and available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street, Sixth Floor.

These issues will not be discussed further in the EIR.

	Yes	No	Discussed
C. OTHER. Could the project:			
Require approval of permits from City Departments other than Department of City Planning or Bureau of Building Inspection or from Regional, State or Federal Agencies?	X	___	X

The proposed project would require permits from the Bay Conservation and Development Commission, the Army Corps of Engineers and the Port of San Francisco. A permit from the Regional Water Quality Control Board may be required.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

D. MITIGATION MEASURES	Yes	No	N/A	Discussed
1. If any significant effects have been identified, are there ways to mitigate them?	X			X
2. Are all mitigation measures identified above included in the project?	X			X

MITIGATION MEASURES INCLUDED AS PART OF THE PROJECT

- An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to ensure coordination between the City's emergency planning activities and the project's plan, and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance of final building permits by the Department of Public Works.

- In order to reduce obtrusive light or glare, the project sponsor would use no mirrored glass on the building.

- The project sponsors would require the general contractors to maintain and operate construction equipment so as to minimize exhaust emissions of TSP and other pollutants, by such means as a prohibition of idling motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs (to reduce emissions) for equipment that would be in frequent use for much of the construction periods.

E. ALTERNATIVES

Alternatives to the proposed project to be analyzed in the EIR include the following:

A. No Project: The site would remain in its existing condition with all existing buildings remaining, or the project would be moved to another unspecified site, not necessarily within the City of San Francisco.

B. Different Waterfront Location: A project located in a freestanding building between Pier 39 and Pier 35.

C. No new fill on existing Pier 39.

D. New access to the existing Pier 39 garage at Stockton Street.

F. MANDATORY FINDINGS OF SIGNIFICANCE	Yes	No	Discussed
*1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or pre-history?	___	X	___
*2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	___	X	___
*3. Does the project have possible environmental effects which are individually limited, but cumulatively considerable? (Analyze in the light of past projects, other current projects, and probable future projects.)	X	___	___
*4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?	___	X	___

G. ON THE BASIS OF THIS INITIAL STUDY:

___ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

___ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers __, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

X I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

BARBARA W. SAHM
Environmental Review Officer

for

Dean L. Macris
Director of Planning

Date: _____

APPENDIX B

TRANSPORTATION

TABLE B-1

PASSENGER LEVELS OF SERVICE ON BUS TRANSIT

	Passengers per Seat
Level of Service A	0.00-0.50
Level of Service A describes a condition of excellent passenger comfort. Passenger loadings are low with less than half the seats filled. There is little or no restriction on passenger maneuverability. Passenger loading times do not affect scheduled operation.	
Level of Service B	
Level of Service B is in the range of passenger comfort with moderate passenger loadings. Passengers still have reasonable freedom of movement on the transit vehicle. Passenger loading times do not affect scheduled operations.	0.51-0.75
Level of Service C	
Level of Service C is still in the zone of passenger comfort, but loadings approach seated capacity and passenger maneuverability on the transit vehicle is beginning to be restricted. Relatively satisfactory operating schedules are still obtained as passenger loading times are not excessive.	0.76-1.00
Level of Service D	
Level of Service D approaches uncomfortable passenger conditions with tolerable numbers of standees. Passengers have restricted freedom to move about on the transit vehicle. Conditions can be tolerated for short periods of time. Passenger loadings begin to affect schedule adherence as the restricted freedom of movement for passengers requires longer loading times.	1.01-1.25
Level of Service E	
Level of Service E passenger loadings approach manufacturers' recommended maximums and passenger comfort is at low levels. Freedom to move about is substantially diminished. Passenger loading times increase as mobility of passengers on the transit vehicle decreases. Scheduled operation is difficult to maintain at this level. Bunching of buses tends to occur which can rapidly cause operations to deteriorate.	1.26-1.50

Table B-1 (continued)

Level of Service F

Level of Service F describes crush loadings. Passenger comfort and maneuverability is extremely poor. Crush loadings lead to deterioration of scheduled operations through substantially increased loading times.	1.51-1.60

Source: Interim Materials on Highway Capacity, Transportation Research Circular 212, pages 73-113, Transportation Research Board, 1980.

L of S - bus passngrs

K INGLESIDE - VAN NESS STATION

Wednesday, September 9, 1981 - 8:00 A.M. - Inbound

N JUDAH - VAN NESS STATION

Wednesday, September 16, 1981 - 5:00 P.M. Outbound

38 GEARY - VAN NESS AVE. AND O'FARRELL ST.

Wednesday, October 21, 1981 - 9:00 A.M. - Inbound

38 GEARY - VAN NESS AVE. AND GEARY BLVD.

Wednesday, October 21, 1981 - 4:20 P.M. - Outbound

Figure B-1 (A)

PHOTOS OF PEAK MUNI LOADING CONDITIONS

SOURCE

ENVIRONMENTAL SCIENCE ASSOCIATES, INC.

30X MARINA EXPRESS - BAYSHORE AVE. AND ARIETA AVE.
Wednesday, October 7, 1981 - 8:00 A.M. - Inbound

J CHURCH - CHURCH ST. AND DUBOCE AVE.
Tuesday, September 29, 1981 - 9:00 A.M. - Outbound

Figure B-1 (B)
PHOTOS OF PEAK MUNI LOADING CONDITIONS

SOURCE
ENVIRONMENTAL SCIENCE ASSOCIATES, INC.

M OCEAN VIEW - CIVIC CENTER STATION

Wednesday, September 9, 1981 - 8:20 A.M. - Inbound

L TARAVAL - VAN NESS STATION

Wednesday, September 16, 1981 - 4:50 P.M. - Outbound

14 MISSION - MISSION STREET AND SOUTH VAN NESS AVE.

Tuesday, September 29, 1981 - 5:45 P.M. - Outbound

N JUDAH - DUBOCE AND CHURCH

Wednesday, June 8, 1983 - 8:00 A.M. Inbound

Figure B-1 (C)

PHOTOS OF PEAK MUNI LOADING CONDITIONS

SOURCE

ENVIRONMENTAL SCIENCE ASSOCIATES, INC.

INTERSECTION ANALYSIS

The capacity analysis of each intersection at which a turning movement count was made utilized the "critical lane" method. This method of capacity calculation is a summation of maximum conflicting approach lane volumes that gives the capacity of an intersection in vehicles per hour per lane. (This method is explained in detail in an article entitled "Intersection Capacity Measurement Through Critical Movement Summations: A Planning Tool," by Henry B. McInerney and Stephen G. Peterson, January 1971, Traffic Engineering. This method is also explained in "Interim Materials on Highway Capacity," Transportation Research Circular No. 212, Transportation Research Board, January 1980). The maximum service volume for Level of Service E was assumed as intersection capacity. A service volume is the maximum number of vehicles that can pass an intersection during a specified time period in which operating conditions are maintained corresponding to the selected and specified Level of Service. For each intersection analyzed, the existing peak-hour volume was computed and a volume-to-capacity (v/c) ratio was calculated by dividing the existing volume by the capacity at Level of Service E.

TABLE B-2

LEVELS OF SERVICE DEFINITIONS
FOR SIGNALIZED INTERSECTIONS[1]

	Volume/Capacity (v/c) Ratio
Level of Service A	< 0.60
Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.	
Level of Service B	0.61-0.70
Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.	
Level of Service C	0.71-0.80
Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally must have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.	
Level of Service D	0.81-0.90
Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.	
Level of Service E	0.91-1.00
Capacity occurs at Level of Service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting upstream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.	

Table B-2 (continued)

Level of Service F	1.01+
Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.	

[1] City and County of San Francisco, Department of Public Works, Traffic Engineering Division.

TABLE B-3

TRAFFIC LEVELS OF SERVICE FOR FREEWAYS

	Volume/Capacity (v/c) Ratio*
Level of Service A	
Level of Service A describes a condition of free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by driver desires, speed limits, and physical roadway conditions. There is little or no restriction in maneuverability due to the presence of other vehicles, and drivers can maintain their desired speeds with little or no delay.	0.00-0.60
Level of Service B	
Level of Service B is in the higher speed range of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable, with a low probability of traffic flow being restricted.	0.61-0.70
Level of Service C	
Level of Service C is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes or pass. A relatively satisfactory operating speed is still obtained.	0.71-0.80
Level of Service D	
Level of Service D approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver, and comfort and convenience are low, but conditions can be tolerated for short periods of time.	0.81-0.90
Level of Service E	
Level of Service E cannot be described by speed alone, but represents operations at even lower operating speeds (typically about 30 to 35 mph) than in Level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages of momentary duration.	0.91-1.00

Table B-3 (continued)

Level of Service F

Level of Service F describes forced flow operation at low speeds (less than 30 mph), in which the freeway acts as storage for queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of downstream congestion. In the extreme, both speed and volume can drop to zero.	1.00+

*Capacity is defined as level of Service E.

Source: Highway Capacity Manual, Special Report 87, Highway Research Board, 1965.

PEDESTRIAN ANALYSIS

The pedestrian analysis has been conducted following methods developed by Pushkarev and Zupard in Urban Space for Pedestrians (MIT Press, 1975). Table B-4 shows the relationship between pedestrian flow rates and the flow regimes (categories) used to describe levels of operation.

TABLE B-4

PEDESTRIAN FLOW REGIMES

Flow Regime	Walking Speed Choice	Conflicts	Flow Rate (P/F/M)[1]
Open	Free Selection	None	0.5
Unimpeded	Some Selection	Minor	0.5 - 2.0
Impeded	Some Selection	High Indirect Interaction	2.0 - 6.0
Constrained	Some Restriction	Multiple	6.0 - 10.0
Crowded	Restricted	High Probability	10.0 - 14.0
Congested	All Reduced	Frequent	14.0 - 16.0
Jammed	Shuffle Only	Unavoidable	16.0+

[1] P/F/M - Pedestrians per foot of sidewalk width per minute.

Source: Boris Pushkarev and Jeffrey M. Zupan, Urban Space for Pedestrians, Massachusetts, MIT Press, 1975.

The borderline between IMPEDED and UNIMPEDED FLOW, with about 130 sq ft (12 m^2) per person, or a flow rate of about 2 people per min per ft (6.5 per m) of walkway width. Individuals as well as couples visible in this view have a choice of speed and direction of movement. This rate of flow is recommended for design of outdoor walkways in office districts and other less dense parts of downtown areas.

The uneven nature of UNIMPEDED FLOW. While the people walking in the plaza which is 17 ft (5.2 m) wide, compared to 23 ft (7 m) in the preceding picture have almost 130 sq ft (12 m^2) per person on the average, the space allocation for the eight individuals in the foreground is closer to 70 sq ft (6.4 m^2). Thus, indirect interaction with others is still quite frequent in the upper range of UNIMPEDED FLOW.

The midpoint of the IMPEDED FLOW range, with about 75 sq ft (6.9 m^2) per person, or a flow rate of about 4 people per min per ft (13 per m) of walkway width. Physical conflicts are absent, but pedestrian navigation does require constant indirect interaction with others. This rate of flow is recommended as an upper limit for the design of outdoor walkways in shopping districts and other dense parts of downtown areas.

Lower range of UNIMPEDED movement, approaching OPEN FLOW. About 350 sq ft (32.2 m^2) per person, or a flow rate of less than 1 person per min per ft (3.3 per m) of walkway width. Complete freedom to select the speed and direction of movement; individuals behave quite independently of each other. For a design standard based solely on pedestrian density, this amount of space can be considered excessive.

Figure B-2 (A)
PHOTOS OF PEDESTRIAN FLOW LEVELS

SOURCE: Pushkarev and Zupan

JAMMED FLOW. Space per pedestrian in this view is about 3.8 sq ft (0.35 m^2). This is representative of the lower half of the speed-flow curve, where only shuffling movement is possible and even the extremely uncomfortable maximum flow rate of 25 people per min per ft (82 per m) of walkway width cannot be attained due to lack of space. Photograph by Louis B. Schlivek.

The threshold of CONGESTED FLOW. The first eleven people in the view have about 16 sq ft (1.5 m^2) per person, corresponding to a flow rate of about 15 people per min per ft (49 per m) of walkway width. The beginnings of congestion are evident in bodily conflicts affecting at least three of the walkers, and in blocked opportunities for walking at a normal pace.

The onset of CROWDED FLOW, with an average of about 24 sq ft (2.2 m^2) per person, or a flow rate of about 10 people per min per ft (33 per m) of walkway width. Choice of speed is partially restricted, the probability of conflicts is fairly high, passing is difficult. Voluntary groups of two, of which two can be seen in the picture, are maintained, but cause interference. Note also some overflow into the vehicular roadway in the background.

The midpoint of the CONSTRAINED FLOW range, with about 30 sq ft (2.8 m^2) per person, or a flow rate of about 8 people per min per ft (26 per m) of walkway width. The choice of speed is occasionally restricted, crossing and passing movements are possible, but with interference and with the likelihood of conflicts. The man in the dark suit seems to be able to cross in front of the two women in the foreground quite freely, but in the background near the curb people are having difficulty with passing maneuvers.

Figure B-2 (B)

PHOTOS OF PEDESTRIAN FLOW LEVELS

SOURCE: Pushkarev and Zupan

APPENDIX C

AIR QUALITY

APPENDIX C

AIR QUALITY

SAN FRANCISCO AIR POLLUTANT SUMMARY 1984-1986[1]

Location: 900 23rd Street, San Francisco

Pollutant	Federal Standard[2]	State Standard[3]	1984	1985	1986
Carbon Monoxide (CO)					
1-hour average (ppm)	35	20			
Highest hourly average			11.0	10.0	9.0
No. of exceedances			0	0	0
8-hour average (ppm)	9	9			
Highest 8-hour average			10.8[4]	15.0[4]	12.6[4]
No. of exceedances			0	0	2
Ozone (O_3)					
1-hour average (ppm)	.12[5]	.10			
Highest hourly average			0.10	0.09	0.07
No. of exceedances			0	0	0
Nitrogen Dioxide (NO_2)					
1-hour average (ppm)	None	.25			
Highest hourly average			0.14	0.12	0.11
No. of exceedances			1	0	0
Sulphur Dioxide (SO_2)					
24-hour average (ppm)	.14	.05			
Highest 24-hour average			0.033	0.032	0.010
No. of exceedances			0	0	0
Total Suspended Particulate (TSP)					
24-hour average (ug/m^3)	260	100			
Highest 24-hour average			152	158	124
No. of exceedances			5	5	5
Annual Geometric Mean (ug/m^3)[6]	75	60			
Annual Geometric Mean			60.0	62.0	52.0
Annual Exceedances			Yes	Yes	No

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Appendix C Table (Continued)

Pollutant	Federal Standard[2]	State Standard[3]	1984	1985	1986
Lead					
3-month Average (mg/m^3)	1.5	None			
Highest 3-month average			0.7	0.3	0.2
No. of exceedances			0	0	0
1-month Average (mg/m^3)	None	1.5	0	0	0
No. of exceedances	---	---	0	0	0

[1] 1984-1986 data collected at 900 23rd Street.

[2] Federal standard are not to be exceeded more than once per year. Annual average standards are not to be exceeded.

[3] State standards are not to be equaled or exceeded, except for CO standards, which are not to be exceeded.

[4] Micro scale site (Ellis St. for street level maximums).

[5] The federal standard is given in terms of Expected Annual Excesses which is based on a 3-year running average.

[6] The annual Geometric Mean is a single number which applies to an entire year of data. "No" indicates TSP concentrations did not exceed 60 (ug/m^3).

Note: ppm = parts per million
ug/mg^3 = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter

Source: BAAMQD, Air Pollution in the Bay Area by Station and Contaminant, March issues, 1984-1986; and California Air Resources Board, California Air Quality Data, Annual Summaries, 1984-1986.

APPENDIX D

FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL NOISE

APPENDIX D

FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL NOISE

This section provides background information to aid in understanding the technical aspects of this report.

Three dimensions of environmental noise are important in determining subjective response. These are:

a. the intensity or level of the sound

b. the frequency spectrum of the sound

c. the time-varying character of the sound

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing.

The "frequency" of a sound refers to the number of complete pressure fluctuations per second in the sound. The unit of measurement is the cycle per second (cps) or Hertz (Hz). Most of the sounds which we hear in the environment do not consist of a single frequency, but of a broad band of frequencies, differing in level. The quantitative expression of the frequency and level content of a sound is its sound spectrum. A sound spectrum for engineering purposes is typically described in terms of octave bands which separate the audible frequency range (for human beings, from about 20 to 20,000 Hz) into ten segments.

Many rating methods have been devised to permit comparisons of sounds having quite different spectra. Fortunately, the simplest method correlates with human response practically as well as the more complex methods. This method consists of evaluating all of the frequencies of a sound in accordance with a weighting that progressively and severely deemphasizes the importance of frequency components below 1000 Hz, with mild deemphasis above 5000 Hz. This type of frequency weighting reflects the fact that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency midrange.

The weighting curve described above is called "A" weighting, and the level so measured is called the "A-weighted sound level," or simply "A-level."

The A-level in decibels is expressed "dBA"; the appended letter "A" is a reminder of the particular kind of weighting used for the measurement. In practice, the A-level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. All U.S. and international standard sound level meters include such a filter. Typical A-levels measured in the environment and in industry are shown in Figure 1.

Although the A-level may adequately describe environmental noise at any instant in time, the fact is that the community noise level varies continuously. Most environmental noise includes a conglomeration of distant noise souces which create a relatively steady background noise in which no particular source is identifiable. These distant sources may

include traffic, wind in trees, industrial activities, etc. These noise sources are relatively constant from moment to moment, but vary slowly from hour to hour as natural forces change or as human activity follows its daily cycle. Superimposed on this slowly varying background is a succession of identifiable noisy events of brief duration. These may include nearby activities or single vehicle passages, aircraft flyovers, etc., which cause the environmental noise level to vary from instant to instant.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. The L10 is the A-weighted sound level equaled or exceeded during 10 percent of a stated time period. The L10 is considered a good measure of the "average peak" noise. The L50 is the A-weighted sound level that is equaled or exceeded 50 percent of a stated time period. The L50 represents the median sound level. The L90 is the A-weighted sound level equaled or exceeded during 90 percent of a stated time period. The L90 is used to describe the background noise.

As it is often cumbersome to describe the noise environment with these statistical descriptors, a single number descriptor called the Leq is also widely used. The Leq is defined as the equivalent steady-state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period. The Leq is particularly useful in describing the subjective change in an environment where the source of noise remains the same but there is change in the level of activity. Widening roads and/or increasing traffic are examples of this kind of situation.

In determining the daily measure of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noises become very noticeable. Further, most people are sleeping at night and are very sensitve to noise intrusion.

To account for human sensitivity to nighttime noise levels a descriptor, Ldn, (day-night equivalent sound level) was developed. The Ldn divides the 24-hour day into the daytime of 7 a.m. to 10 p.m. and the nighttime of 10 p.m. to 7 a.m. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Ldn, then, is the A-weighted average sound level in decibels during a 24-hour period with 10 dBA added to the hourly Leqs during the nighttime. For highway noise environments the Leq during the peak traffic hour is approximately equal to the Ldn.

The effects of noise on people can be listed in three general categories:

1. subjective effects of annoyance, nuisance, dissatisfaction
2. interference with activities such as speech, sleep, learning
3. physiological effects such as startle, hearing loss

The sound levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Unfortunately, there is as yet no completely satisfactory measure of the subject effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance, and habituation to noise over differing individual past experiences with noise.

Thus, an important parameter in determining a person's subjective reaction to a new noise is the existing noise environment to which one has adapted: the so-called "ambient" noise. "Ambient" is defined as "the all-encompassing noise associated with a given environment, being a composite of sounds from many sources, near and far." In general, the more a new noise exceeds the previously existing ambient, the less acceptable the new noise will be judged by the hearers.

With regard to increases in noise level, knowledge of the following relationships will be helpful in understanding the quantitative sections of this report:

1. Except in carefully controlled laboratory experiments, a change of only 1 dBA cannot be perceived.

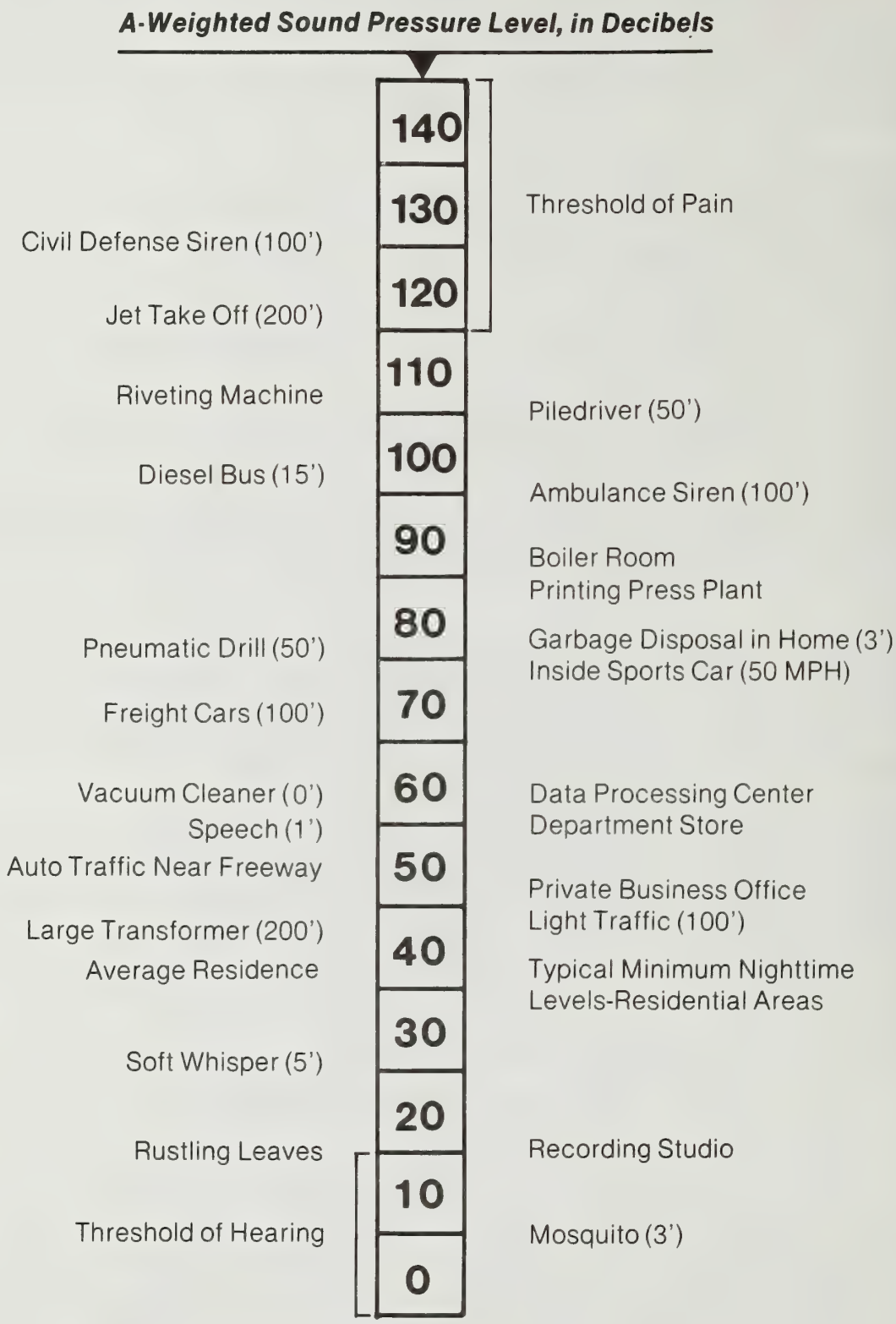
2. Outside of the laboratory, a 3-dBA change is considered a just-noticeable difference.

3. A change in level of at least 5 dBA is required before any noticeable change in community response would be expected.

4. A 10-dBA change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response.

Source: Charles M. Salter Associates, Inc., December 1982.

TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND INDUSTRY



(100') - Distance in Feet Between Source and Listener

SOURCE: CHARLES M. SALTER ASSOCIATES, INC., 1982

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APPENDIX E

CITY PLANNING COMMISSION RESOLUTIONS 7551 AND 8548

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SAN FRANCISCO

CITY PLANNING COMMISSION

RESOLUTION NO. 7551

WHEREAS, Application No. CU76.8 has been made by Waterfront Recreational Facilities, Inc. (Developer) to the San Francisco City Planning Commission for conditional use authorization to develop a commercial and marina project, as set forth in "Exhibit A - Preliminary Plans for North Point Park/Marina", on property under the jurisdiction of the Port of San Francisco in the general location of Piers 37 - 41; and

WHEREAS, The City Planning Commission has certified an Environmental Impact Report for said North Point Park/Marina; and

WHEREAS, The City Planning Commission has amended the Northern Waterfront Plan of the Master Plan in order to change previous objectives, policies and maps relating to the area of Piers 37 - 41; and

WHEREAS, The Developer will cooperate with the Department of City Planning in securing general endorsement, by the responsible public and private bodies, of plans for public improvements in the Fisherman's Wharf area to mitigate the vehicular and pedestrian traffic impacts of the project, as described in "Exhibit B;" and

WHEREAS, The San Francisco Art Commission and the State of California Bay Conservation and Development Commission also have jurisdiction over North Point Park/Marina development; and

WHEREAS, The Northern Waterfront Planning Advisory Committee has recommended to the City Planning Commission that relatively intensive commercial development be allowed in the area of Piers 37 - 41 in exchange for the limiting of commercial use of the Ferry Building area waterfront to only those interim uses which are designed to minimize impact on future maritime uses; and also recommended the development of the North Point Park/Marina, subject to conditions to be applied by the City Planning Commission;

THEREFORE BE IT RESOLVED, That the City Planning Commission finds that the criteria set forth in Section 303(c) of the City Planning Code are met and said Conditional Use is hereby AUTHORIZED in accordance with standards specified in the City Planning Code and subject to further conditions as follows:

1. Development of final plans shall be in general conformity with plans on file with this authorization labeled "Exhibit A", and including "Overall Plan" dated August 18, 1976 and "Landscape Plan" dated August 26, 1976; and in general conformity with conditions stated in the document on file with this authorization labeled "Exhibit B - Design Standards for North Point Park/Marina" and the map labeled "Exhibit C - Site Diagram of North Point Park/Marina". Final plans for the development of all elements of the project, including the park, garage, commercial development, signs and any temporary or permanent structures located on the site, shall be developed in consultation with the Department of City Planning and the Art Commission and shall be approved prior to approval of any building permits.

2. The developer shall provide a park of a minimum of 5.2 acres including the fishing area on the breakwater at Pier 41 parallel to Pier 39, of the general level of quality of Sidney Walton Park in San Francisco, and having the following features:

    a. The park and water's edge shall be designed to be freely accessible.

    b. There shall be no permanent buildings or structures in the park, except those required for emergency services, maintenance, public transit, or other

services that complement the recreational function of the park, such as small convenience food vending.

c. The park shall provide adequate views of the Bay from inland properties and from the park, taking into account requirements of proper park design.

d. The development and maintenance of landscaping shall conform to the Department of City Planning "Standard Regulations for Landscaping Improvements", May 1974; and all landscaping shall be continuously maintained and replaced as necessary to sustain plants in a healthy, attractive condition and to promote normal growth and full development typical of their species.

e. The Developer shall make provision to mitigate adverse wind effects.

f. A bicycle path shall be provided through the park generally parallel to the Embarcadero roadway.

g. Protected bicycle parking shall be provided within the proposed garage and may be provided within the project area at appropriate locations.

h. The park shall be coordinated with the .5 acre park area under lease from the Port to Golden Gate Scenic Steamship Lines and Harbor Tug and Barge, Inc.

3. The parking garage shall have a maximum capacity sufficient to cover the following: 850 spaces for North Point Park/Marina, and 150 spaces for Harbor Tours as required by the Development Agreement between the Developer and the Port of San Francisco. The garage shall be designed in consultation with the Department of City Planning and the Traffic Engineering Division of the Department of Public Works in conformance with standards described in "Exhibit B"; and shall have vehicular access and egress only at those locations shown in "Exhibit C".

4. Construction of the garage shall not commence unitl the developer has started construction on 15 percent of the total commercial space and 15 percent of the total marina; and has binding commitments to lease at least 50 percent of the commercial space.

5. Prior to commencement of construction of the garage, approvals and funding shall have been obtained for the relocation of that section of The Embarcadero roadway between Powell and Kearny Streets. Prior to occupancy of any garage or commercial facilities, said roadway shall been relocated to accommodate park development in general conformance with "Exhibits A, B and C" on file with this authorization, and all breakwaters shall have been completed; unless a later date for relocation of the roadway and construction of the breakwaters shall have been approved by the City Planning Commission.

6. The area of improvements to be made as part of this project shall include the following parcels, as shown in "Exhibits A and C":

   a. the area between the improved Embarcadero roadway and the existing curb line of The Embarcadero between Beach and North Point Streets, and

   b. the entire areas of Seawall Lots 311 and 312.

7. The Developer shall provide design assistance to Golden Gate Scenic Steamship Lines and Harbor Tug and Barge, Inc. so that land leased by those companies between the existing curb line and the waterfront line east of Powell Street adjacent to Pier 41, will be developed in conformity with the overall plan of the park.

8. A proper legally binding bond or other security or guarantee satisfactory to the City Planning Commission, approved by the City Attorney as to form, and the City Controller as to surety, to be in an amount sufficient to cover the cost of constructing the park, shall be posted by the Developer with the Department of City Planning guaranteeing completion of the park. Use of this security or guarantee shall be made to construct the park if construction of the park has not begun within 90 days after 40 percent of the commercial space has been occupied, or within one year after any portion of the project has been occupied; or if said park construction has not thereafter been diligently pursued to completion. Said posting of this security or guarantee shall occur prior to the approval of any building permits for the project.

9. There shall be no facilities in the project which would allow the take-off or landing of aircraft.

I hereby certify that the foregoing Resoltuion was ADOPTED by the City Planning Commission at its regular meeting of August 26, 1976.

Lynn E. Pio
Secretary

AYES: Commissioners Dearman, Finn, Lau, Miller, Rosenblatt.

NOES: Commissioners Bierman, Starbuck.

ABSENT: None

PASSED: August 26, 1976

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CU76.8

EXHIBIT B
DESIGN STANDARDS FOR NORTH POINT PARK/MARINA

SAN FRANCISCO
CITY PLANNING COMMISSION

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A. General

1. North Point Park should meet the active and passive recreation needs of visitors and residents of all ages, and all park areas should be freely accessible to the public.

2. The leases of the Eagle Cafe and the Crow's Nest Restaurant should not be extended at their present locations, and these facilities should be relocated into the commercial development on Pier 39 at the commencement of construction, if possible.

3. Design elements that communicate the themes of maritime activity and the history of San Francisco should be incorporated into the park design.

4. Park design should be coordinated with existing and future pedestrian-ways and open space along the Northern Waterfront east and west of the project site in order to facilitate future expansion of these facilities.

5. The parking rates of the garage should encourage short-term parking, and the garage should be open to the general public.

B. Plant Materials

1. Most of the areas within the park boundaries that overlay earth fill should have non-containerized vegetation and lawn areas. Containerized plant materials should be used in pedestrian areas and those portions of the park situated on existing concrete slab and concrete pier substructure, located between the existing "waterfront line" and the "back of bulkhead line" as shown on the Port of San Francisco General Survey drawing number 6244-406-2, November 1955.

2. Plant materials consisting of trees, shrubs, and ground covers should have a demonstrated capacity to remain viable, assuming required maintenance care, under such conditions as (a) frequent wind speeds up to, and exceeding, 35 m.p.h.; (b) high atmospheric salt content; (c) a high salt-water table ranging from 3 to 5 feet beneath the existing earth-fill areas under and adjacent to The Embarcadero roadway; and (d) sub-surface earth-fill material consisting of a mixture of construction rubble, rocks, sand and gravel with varying drainage capacities.

3. The document by the Department of City Planning "Street-tree Planting Plan for the Northern Waterfront" October, 1973 should be examined as a general guide to appropriate plant materials.

C. Wind Abatement

1. Possible solutions to wind problems include utilizing such devices as wind barriers, plant materials, earth mounding and the combination of plant containers and depressed seating. Reasonable protection for people from excessive wind, and adjacent traffic noise, should be provided.

2. Building layouts, roof designs and building orientation along Pier 39 should provide maximum wind shelter and sunlight to interior courtyards.

3. Trees of between 2 and 4 inches in girth and from 12 to 20 feet in height shall be installed with combinations of appropriate shrubs to achieve immediate reduction of wind velocity in critical pedestrian gathering areas.

D. Views

1. Grade level views looking north to the Bay should be created through the park from Powell, Stockton, Grant and Kearny Streets and looking east to the Bay from Jefferson and Beach Streets, except for a pedestrian overpass or covered at-grade walkway which should be designed to minimize

view blockage. Within these corridors, defined by the projection of these street rights-of-way over the park and breakwaters, structures or vegetation that obstructs views should not occur.

2. The park should provide continuous Bay vistas and should have a variety of viewing experiences.

3. A public open space with panoramic views should be provided at the end of Pier 39.

E. Pedestrian Circulation Areas

1. Park entrances at Jefferson and Kearny Streets should denote the gateway to a major public open space; there should be no sense of constriction or of entering a private area in the design of these spaces.

2. The rail and bus transit stops, auto drop-off zone, people-mover loading areas and pedestrian cross-walks of the Embarcadero should all be integrated at the entrance to Pier 39.

3. A variety of edge conditions should be provided along the water's edge of the park, such as steps, and narrow gangway paths with water on both sides.

4. The fishing pier/breakwater at Pier 41 parallel to Pier 39, and the perimeter of Pier 39, should allow pedestrian access and provide places for public fishing.

5. Interior plazas on Pier 39 should provide appropriate landscaping features, including nautical relics and ample outdoor seating.

F. Landscape Furniture

1. Salvaged pier planking and pilings should be used as building material, where feasible, for such elements as plant containers, steps and walks, light and sign poles, railings, seating and tables, transit stops and telephone booths.

2. There should be no commercial signs in the park other than identification signs on small convenience food facilities; only directional regulatory, or informational signs should occur. They should have consistency in lettering, color and style, and should keep a maritime theme.

3. All lighting should be sufficient for public safety, and avoid unnecessary glare. The design of fixtures should be in keeping with the park character and landscape furniture.

G. Garage Design

In the preparation of final plans for the garage, special attention will be given by the Department of City Planning in its review to the following design considerations:

1. The creation of a building facade that is compatible with the scale and character of the surrounding maritime area.

2. The design of frontages along sidewalks that enhance the pedestrian environment.

3. The selection of appropriate exterior texture and color treatments.

4. The visual screening of interior spaces of the garage at ground level (except at the entrances) in an attractive manner.

5. The design of interior garage lighting which prevents the direct illumination of areas beyond the building.

6. Prior to commencement of garage operation, the approval of all lighting and signs by the Department of City Planning.

7. The mitigation of the visual impact of parked cars by landscaping, roof and facade design. Particular attention should be given to the appearance of the garage from Telegraph Hill.

8. The provision of landscaping around the garage on the north and east sides in general conformity with the overall design of North Point Park.

H. Service Area

1. To the extent possible, all vehicles should be stored in the garage and not in the service area.

2. Service buildings should be arranged to minimize view blockage and permit continuous pedestrian access along the water's edge. Their visual impact should be the minimum possible.

3. There should be no employee parking in the service area.

I. The Embarcadero Roadway

The following describes The Embarcadero roadway as it is to be relocated to accommodate park development, in general conformity with "Exhibits A and C":

1. Between Jefferson and Beach Streets The Embarcadero roadway should be relocated as far inland as possible and should consist of two northbound traffic lanes, one northbound rail/bus transit lane and, if determined to be necessary, one southbound traffic lane.

2. Between Beach and North Point Streets The Embarcadero should be relocated as far inland as possible and should consist of two northbound traffic lanes, one northbound rail/bus transit lane, one southbound traffic lane, and one southbound combined rail/bus/traffic lane.

J. Traffic Improvements

The Developer will cooperate with the City Planning Commission, Department of City Planning, Port of San Francisco and all other necessary agencies and groups in the accomplishment of improvements such as the following, in order to create the best possible pedestrian and vehicular circulation system for the Fisherman's Wharf area:

1. The relocation and narrowing of the Embarcadero in general conformity with "Exhibits A and C".

2. The relocation of surface parking away from Piers 43 and 43½ to provide greater walkways and open space around the piers.

3. The creation of a plaza on Taylor Street, and adjacent area, between Jefferson Street and The Embarcadero, with service access to the [illegible]

4. The conversion of Jefferson Street between Powell and Hyde Streets to one-way westbound, with an exclusive rail/bus transit lane.

5. The conversion of Beach Street between Grant and Polk Streets to one-way eastbound, with an exclusive rail/bus transit lane between Polk and Columbus Streets.

6. The provision of rail/bus transit lanes on The Embarcadero between North Point and Jefferson Streets. If Interstate Highway Funds from the uncompleted I-280 freeway can be used for traffic improvements in the Fisherman's Wharf area, they should be used to develop the rail/bus transit lanes described in (4), (5) and (6) above.

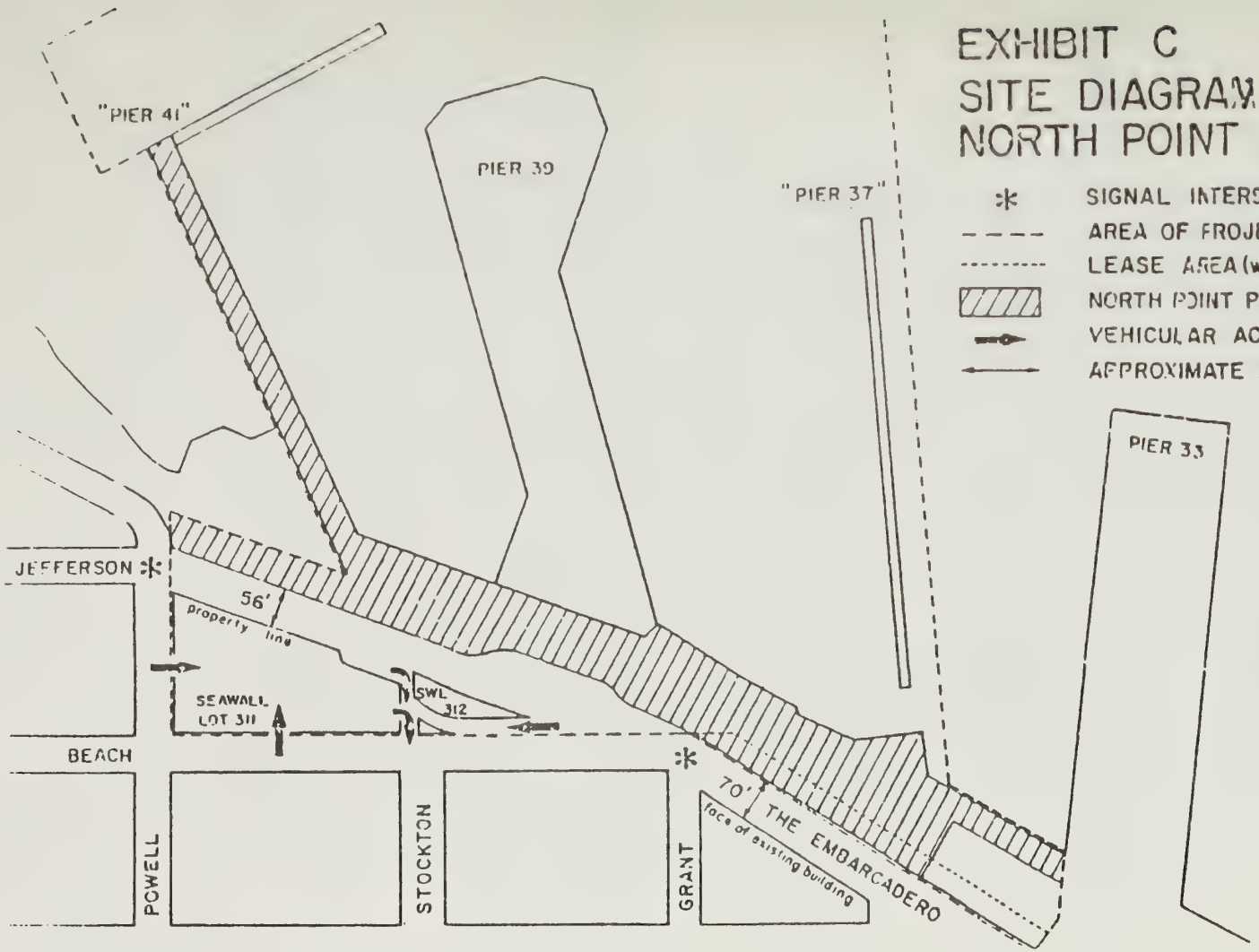
7. The provision of traffic signals at the intersections indicated in "Exhibit C".

8. The relocation of tour buses away from the Bay, possibly to a place along Jefferson Street between Powell and Mason Streets.

9. The removal of metered parking spaces on the north side of The Embarcadero between Mason and Powell Streets (approximately 15 spaces) to allow (2) above to occur; and the removal of metered parking spaces along the north side of Jefferson Street between Mason and Powell Streets (approximately 12 spaces) to allow (8) above to occur.

10. The development of vehicular access to the parking lot of Golden Gate Scenic Steamship Lines and Harbor Tug and Barge from The Embarcadero west of Powell Street rather than through the park.

EXHIBIT C
SITE DIAGRAM OF NORTH POINT PARK / MARINA



- ✻ SIGNAL INTERSECTION
- AREA OF PROJECT IMPROVEMENTS
- LEASE AREA (where it differs from above area)
- NORTH POINT PARK (minimum 5.2 acres)
- VEHICULAR ACCESS AND EGRESS LOCATION
- APPROXIMATE ROADWAY DIMENSION

N

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SAN FRANCISCO

CITY PLANNING COMMISSION

RESOLUTION NO. 8548

WHEREAS, The City Planning Commission on March 27, 1980 considered an application for conditional use authorization(CU79.107) to modify a previous authorization for a retail/entertainment/park complex, on property described as follows:

> Property in the jurisdiction of the Port of San Francisco, Piers 37, 39, and part of 41, and Sea Wall Lots 311 and 312, in C-2 and P zoning districts and in Northern Waterfront Special Use District No. 1;

and

WHEREAS, The Commission on August 26, 1976 approved under CU76.8 Resolution No. 7551 which authorized development of the North Point Park/Marina (Pier 39) project as a commercial use on the Northern Waterfront, subject to conditions including the following:

> "There shall be no permanent buildings or structures in the park, except those required for emergency services, maintenance, public transit, or other services that complement the recreational function of the park, such as small convenience food vending;" and
>
> "There shall be no commercial signs in the park other than identification signs on small convenience food facilities; only directional regulatory, or informational signs should occur;" and
>
> "Service buildings should be arranged to minimize view blockage and permit continuous pedestrian access along the water's edge;" and

WHEREAS, The subject application is for authorization to locate facilities for a commercial tour boat operation in the western park area, to locate signs for that operation in the park, to relocate a proposed service building from the eastern end of the park to the eastern end of the parking garage on Sea Wall Lot 311, and to eliminate the pedestrian access adjacent to the service yard which was proposed for the eastern end of the park; and

WHEREAS, Facilities for the tour boat operation have been temporarily located in the park without the required authorization of the Commission; and

WHEREAS, An administrative amendment to the Final Environmental Impact Report for the project (EE75.368) was prepared on March 24, 1980 for the requested authorization:

THEREFORE, BE IT RESOLVED, That before acting on the application, the Commission certifies that they have considered the information in the administrative amendment to the Final Environmental Impact Report; and

BE IT FURTHER RESOLVED, That the Commission finds the criteria of Sections 240.1 and 303 of the City Planning Code are met, and hereby APPROVES a conditional use to modify Resolution No. 7551 to the extent necessary to allow the development proposed under plans filed with the subject application, CU79.107, subject to the following conditions:

1. This authorization is for facilities for operation of tour boats at the western area of the park, relocation of the previously approved service building to the east end of the garage and elimination of the walkway along the water north of the service yard.

2. Final plans for each element of the proposal shall be in general conformity to the plans on file with the application at the Department of City Planning labeled "Exhibit A."

3. The only tour boat facilities authorized to be in the park are a ticket kiosk placed approximately in the center of the large paved area in the western park with appropriate signing on the face of that kiosk and banners on the four flagpoles at the pier entrance.

4. An entrance and/or exit for the parking garage shall be provided in the ground floor of the new service building and shall be made operational at such time as the transit lane on the Embarcadero is needed for public transit and if the Department of City Planning in consultation with the Department of Public Works and Police Department determines that said entrance and/or exit is needed to provide adequate traffic circulation in the general area.

5. Such landscaping as is deemed appropriate by the Department of City Planning, shall be provided to screen and reduce the mass of the service building.

I hereby certify that the foregoing Resolution was ADOPTED by the City Planning Commission at its regular meeting of March 27, 1980.

Lee Woods, Jr.
Secretary

AYES: Commissioners Bierman Dearman, Karasick, Kelleher, Nakashima, Rosenblatt.

NOES: None.

ABSENT: Commissioner Starbuck.

PASSED: March 27, 1980.